



# Preventing Child Deaths in Missouri



The Missouri Child Fatality  
Review Program

Annual Report for  
2005





**Matt Blunt, Governor**  
State of Missouri

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Missouri Department of Social Services



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# PREVENTING CHILD DEATHS IN MISSOURI

## THE MISSOURI CHILD FATALITY REVIEW PROGRAM

### ANNUAL REPORT FOR 2005



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## DEDICATION



This report reflects the work of many dedicated professionals throughout the state of Missouri. Through better understanding of how and why children die, we strive to improve and protect the lives of Missouri's youngest citizens. We will always remember that each number represents a precious life lost. We dedicate this report to these children and their families.

# MISSOURI CHILD FATALITY REVIEW PROGRAM

## CHILD FATALITY REVIEW IN MISSOURI

Death rates for infants, children, and teens are widely recognized as valuable measures of child wellbeing, particularly when viewed within the context of a decade of demographic changes in our state. However, it is the accuracy of key factors associated with child deaths that provides the basis for identifying vulnerable children, and responds in ways that will protect and improve their lives. In 1995, the U.S. Advisory Board on Child Abuse and Neglect concluded that child abuse and neglect fatalities, and other serious and fatal injuries to children could not be significantly reduced or prevented without more complete information about why these deaths occur and how such tragedies might be avoided. It was widely acknowledged that many child abuse and neglect deaths were under-reported and/or misclassified. Scholars, professionals, and officials around the nation had agreed that a system of comprehensive Child Death Review Teams could make a major difference. In 1991, Missouri had initiated the most comprehensive child fatality review system in the nation, designed to produce an accurate picture of each child death, as well as a database providing ongoing surveillance of all childhood fatalities. The Missouri Child Fatality Review Program (CFRP) was presented in the Advisory Board's report as a state of the art model. While the program has evolved and adapted to meet new challenges, the objectives have remained the same-identifying potentially fatal risks to infants and children, and responding with multi-level prevention strategies.



In Missouri, all fatality data is collected by means of standardized forms and entered into a database. What is learned can be used immediately by the community where the death occurred. The sum of statewide data is used to identify trends and patterns requiring systemic solutions. The Missouri Child Fatality Review Program has succeeded in remaining effective, relevant and sustainable over ten years. The success of the program is due in large part to the support of panel members, administrators and other professionals who do this difficult work voluntarily, because they understand its importance. This work is a true expression of advocacy for children and families in our state.

Missouri legislation requires that every county in our state (including the City of St. Louis) establish a multidisciplinary panel to examine the deaths of all children under the age of 18. If the death meets specific criteria, or if requested by the coroner/medical examiner, it is referred to the county's multidisciplinary CFRP panel. The minimum core panel for each county includes: Coroner/Medical Examiner, Law Enforcement, Juvenile/Family Court, Emergency Medical Services, Prosecutor, Public Health and Children's Division. Optional members may be added at the discretion of the panel. The panels do not act as investigative bodies. Their purpose is to enhance the knowledge base of the mandated investigators and to evaluate the potential service and prevention interventions for the family and community.

Of all child deaths in Missouri, about 1200 deaths annually, approximately one-third merit review. To come under review, the cause of the child's death must be unclear, unexplained, or of a suspicious circumstance. All sudden, unexplained deaths of infants one week to one year of age, are required to be reviewed by the CFRP panel. (This is the only age group for which an autopsy is mandatory.)



# STATE TECHNICAL ASSISTANCE TEAM AND CHILD FATALITY REVIEW PROGRAM

## MISSOURI STATE STATUTES

- Section 210.150 and 210.152 (Confidentiality and Reporting of Child Fatalities)
- Section 210.192 and 210.194 (Child Fatality Review Panels)
- Section 210.195 (State Technical Assistance Team - duties)
- Section 210.196 (Child Death Pathologists)
- Section 211.321; 219.061 (Accessibility of juvenile records for child fatality review)
- Section 194.117 (Sudden Infant Death; infant autopsies)
- Section 58.452 and 58.722 (Coroner/Medical Examiners responsibilities regarding child fatality review)

## CONFIDENTIALITY ISSUES (RSMo 210.192 TO 210.196)

A proper Child Fatality Review Program (CFRP) review of a child death requires a thorough examination of all relevant data, including historical information concerning the deceased child and his/her family. Much of this information is protected from disclosure by law, especially medical and child abuse/neglect information. Therefore, CFRP panel meetings are always closed to the public and cannot be lawfully conducted unless the public is excluded. Each CFRP panel member should confine his or her public statements only to the fact that the panel met and that each panel member was charged to implement their own statutory mandates.

In no case, should any other information about the case or CFRP panel discussions be disclosed. All CFRP panel members who are asked to make a public statement should refer such inquiries to the panel spokesperson. Failure to observe this procedure may violate Children's Division regulations, as well as state and federal confidentiality statutes that contain penalties.

Individual disciplines (coroner/medical examiners, sheriff departments, prosecuting attorneys, etc.) can still make public statements consistent with their individual agency's participation in the investigation, as long as they do not refer to the specific details discussed at the CFRP panel meeting.

No CFRP panel member is prohibited from making public statements about the general purpose, nature or effects of the CFRP process. Panel members should also be aware that the legislation which established the CFRP panels provides official immunity to all panel participants.



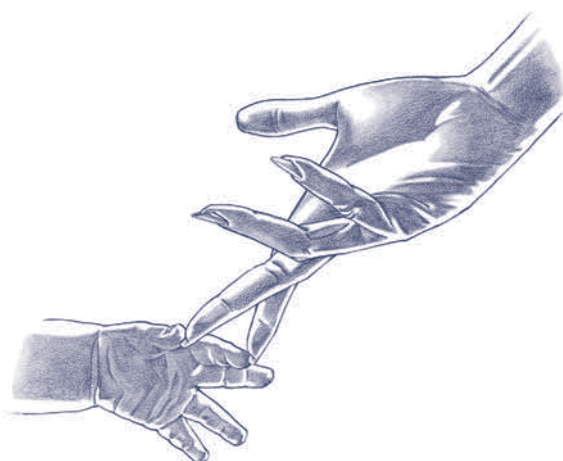
## WHEN A CHILD DIES

The loss of a loved one...particularly a child...is perhaps the greatest loss an individual or family can experience. Many overwhelming feelings follow the death of a child. This grief and sadness is a natural and normal reaction to an irreplaceable loss.

To better understand why and how our children die, the State of Missouri has implemented the Child Fatality Review Program. By reviewing child fatalities, we hope to identify causes and strategies that will ultimately lead to a reduction, in certain cases, of child fatalities. Missouri state law (RSMo 210.192) now requires that any child, birth through age 17, who dies from any cause, be reported to the coroner/medical examiner. The coroner/medical examiner is mandated to follow specific procedures concerning these fatalities. These include:

- All **sudden, unexplained** deaths of infants, from one week to one year, are required to be autopsied by a certified child-death pathologist. The most common questions for parents, “Why did our baby die?” can really only be answered by having an autopsy performed. During an autopsy, the internal organs are examined. This is done in a professional manner, so that the dignity of the child is maintained. The procedure will not prevent having an open casket at the funeral. Preliminary results may be available in a few days; however, the final report may take several weeks.
- In all other child deaths, the coroner/medical examiner is required to consult with a certified child-death pathologist regarding the circumstances of death. In some cases, an autopsy will be ordered.
- If the fatality meets certain criteria, the circumstances surrounding the death will be reviewed by the county Child Fatality Review Program panel. Facts regarding the death are discussed by the professionals who serve on the panel. The represented agencies on the panel have the responsibility to contribute information that will lead to a more accurate determination of the cause of death; they also try to identify ways to prevent further deaths from occurring. **All information is kept confidential.**

The Child Fatality Review Program is a true expression of child advocacy. Like you, we want to know why the death occurred. We will do everything we can to explain and help you understand why.



# MISSOURI INCIDENT FATALITIES

“A simple child,  
That lightly draws its breath,  
And feels its life in every limb,  
What should it know of death?”

-William Wordsworth

In reviewing this report, the reader should be aware of some important definitions and details about how child deaths are reported and certified in Missouri, summarized here: (Please refer to Appendix 6, Definitions of Important Terms and Variables, for additional information.)

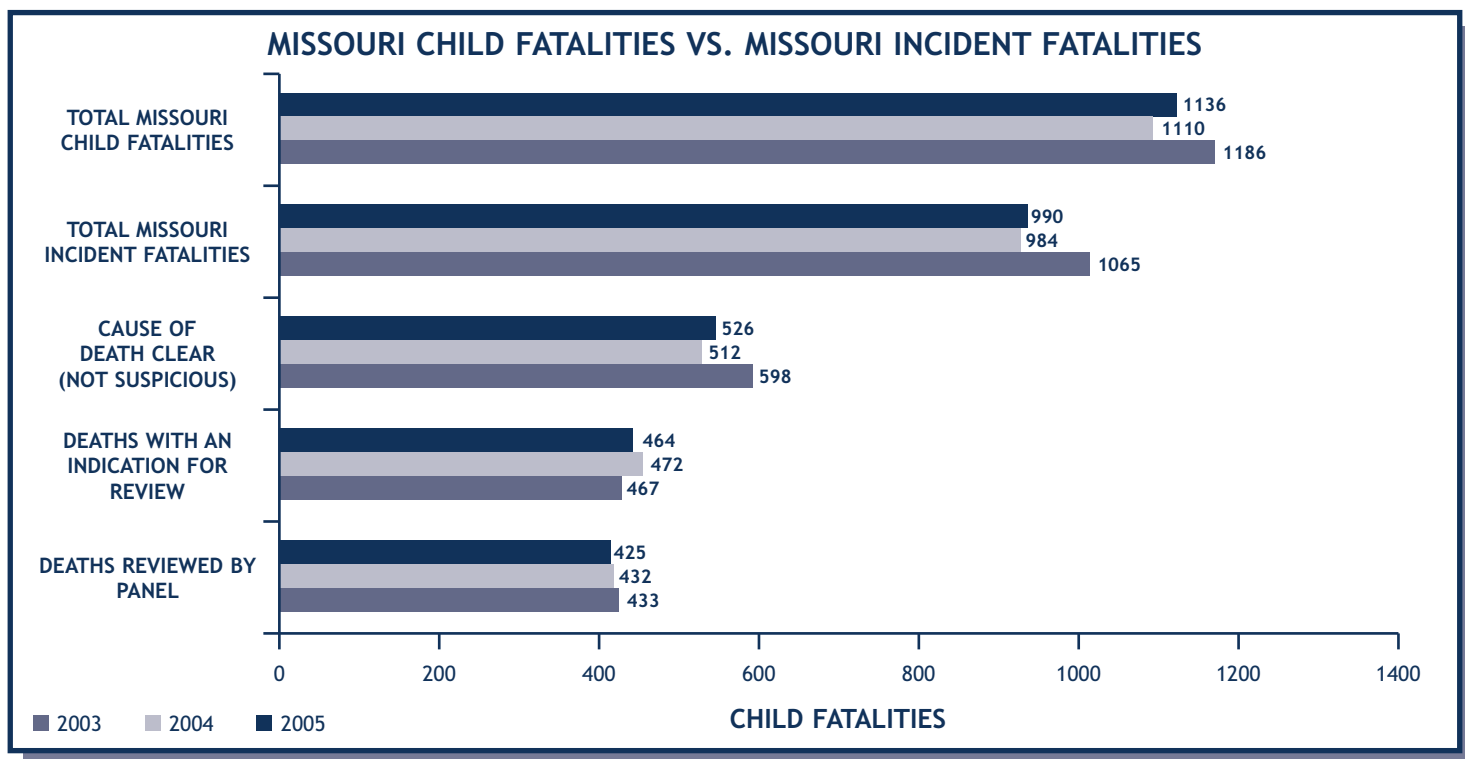
- **“Missouri Child Fatalities”** refers to all children age 17 and under, who died in Missouri, without regard to the state of residence or the state in which the illness, injury or event occurred. (For example, a child who is a resident of Kentucky, injured in a motor vehicle crash in Illinois and brought to a Missouri hospital, where he or she subsequently dies, would be counted as a “Missouri Child Fatality.” This death would be reported to the Child Fatality Review Program on a Data Form 1, Section A only, as an out-of-state event and reported to Illinois.)
- **“Missouri Incident Fatality”** refers to a *fatal illness, injury or event*, which occurs *within the state of Missouri*. (This is not necessarily the county or state in which the child resided.) If the death meets the criteria for panel review, it is reviewed in the county in which the fatal injury, illness or event occurred.
- Every Missouri incident child fatality is required to be reviewed by the coroner or medical examiner and the chairperson for the county CFRP panel. The findings of the review are reported on the Data Form 1.
- Any child death that is *unclear, unexplained, or of a suspicious circumstance, and all sudden unexplained deaths of infants one week to one year of age* are required to be reviewed by a county-based CFRP panel. Panel findings are reported on the Data Form 2. Panel members receive annual training on the investigation of child fatalities.
- **Multiple-Cause Deaths:** Cause of death is a disease, abnormality, injury or poisoning that contributed directly or indirectly to death. However, a death often results from the combined effect of two or more conditions. Because the Child Fatality Review Program is focused on the prevention of child fatalities, the precipitating events are of particular concern. Therefore, deaths are categorized according to the circumstances of death, which may not be the immediate cause of death listed on the death certificate. (An example would be a child passenger in a car that runs off the road and lands in a ditch full of water; the “immediate cause of death” is listed on the death certificate as “drowning,” but the precipitating event was a motor vehicle accident. This death would be reported in the Motor Vehicle Fatalities section, with a footnote indicating that the death certificate lists “drowning” as the immediate cause of death.)
- The Child Fatality Review Program data management unit links data collected on the Data Forms 1 and 2 with the Department of Health and Senior Services birth and death data. Every attempt is made to reconcile the two systems; however, in some cases, crucial data components are incomplete and are noted, as appropriate.

- All deaths included in this CFRP Annual Report occurred in calendar year 2005. Some of the cases reviewed may not have been brought before a county panel until the year 2006.
- In some cases, panels did not complete all of the information requested on the data form.
- Of the **464** Missouri Incident Fatalities reported on Data Form 1 in 2005, with indication for review, **39** did not receive required CFRP panel review, or panel findings were not submitted on Data Form 2. These **39** fatalities are included in this 2005 CFRP Annual Report because the data, though incomplete, is useful and accurate within the limitations on the Data Form 1 information.
- In 2005, **54** Missouri Incident Fatalities were not reported on either a Data Form 1 or Data Form 2, but were reported to CFRP by death certificates from the Department of Health and Senior Services. From information provided by the death certificates, **21** of those **54** fatalities (39%) had at least one indication for review; among those, **13** motor vehicle fatalities, **4** Undetermined, **one** Suffocation, **one** Poisoning, **one** Firearm, and **one** Drowning. Those fatalities are not included in the data for this annual report.

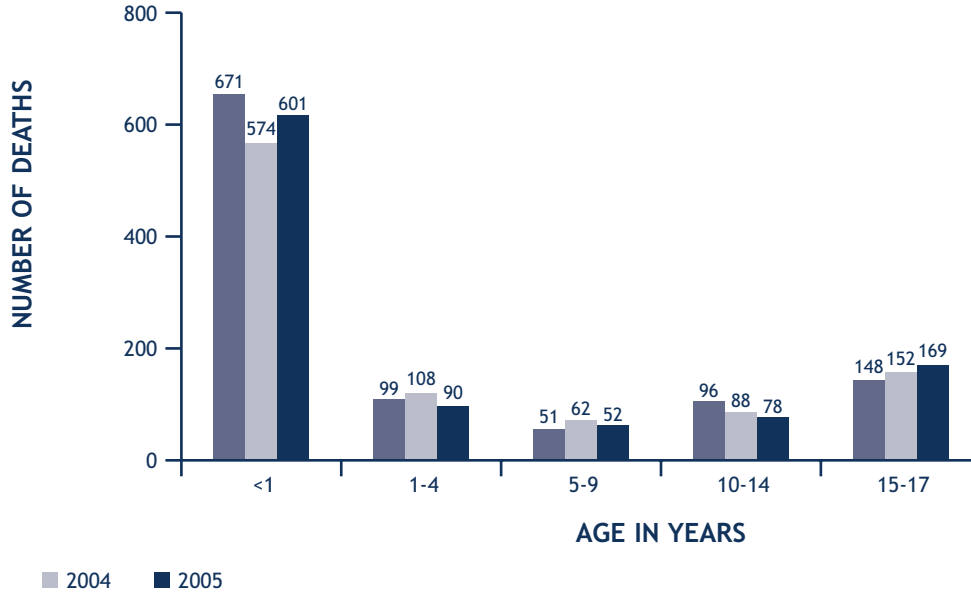
## SUMMARY OF FINDINGS

### MISSOURI INCIDENT FATALITIES, 2005

In 2005, **1136** children age 17 and under died in Missouri. Of those deaths, **990** were determined to be “Missouri incident fatalities” and, therefore, subject to review by the coroner or medical examiner. Of the 990 deaths, **464** had indications for review by a county CFRP panel, and of those **425** were reviewed and a Data Form 2 completed.



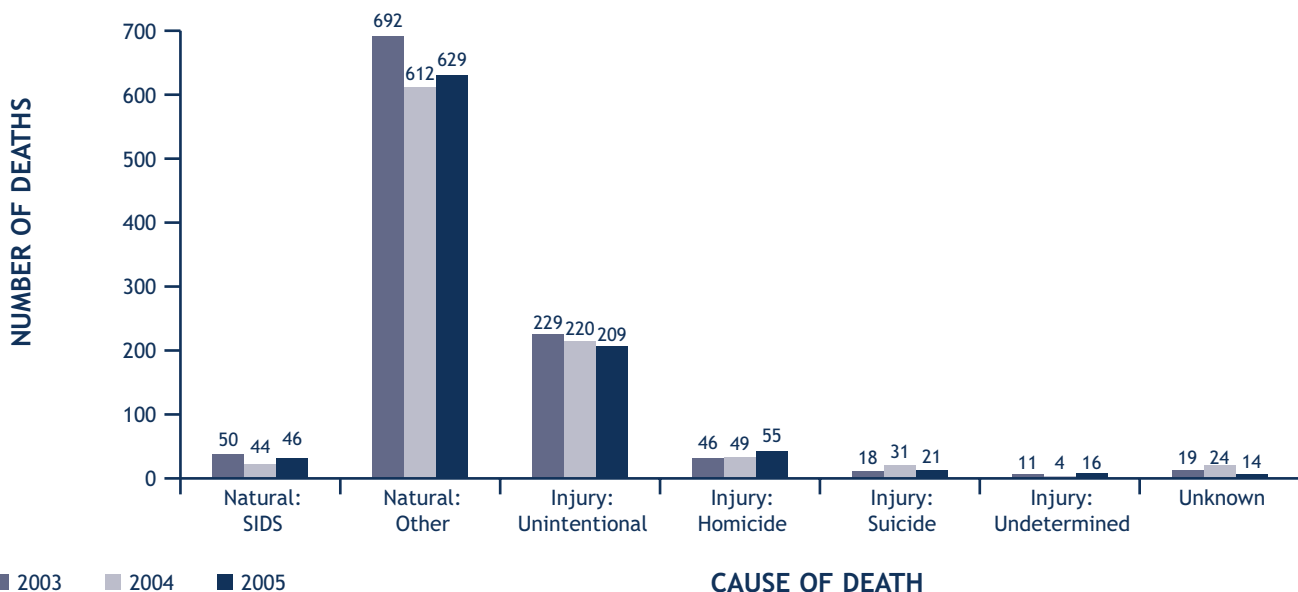
### MISSOURI INCIDENT FATALITIES BY AGE



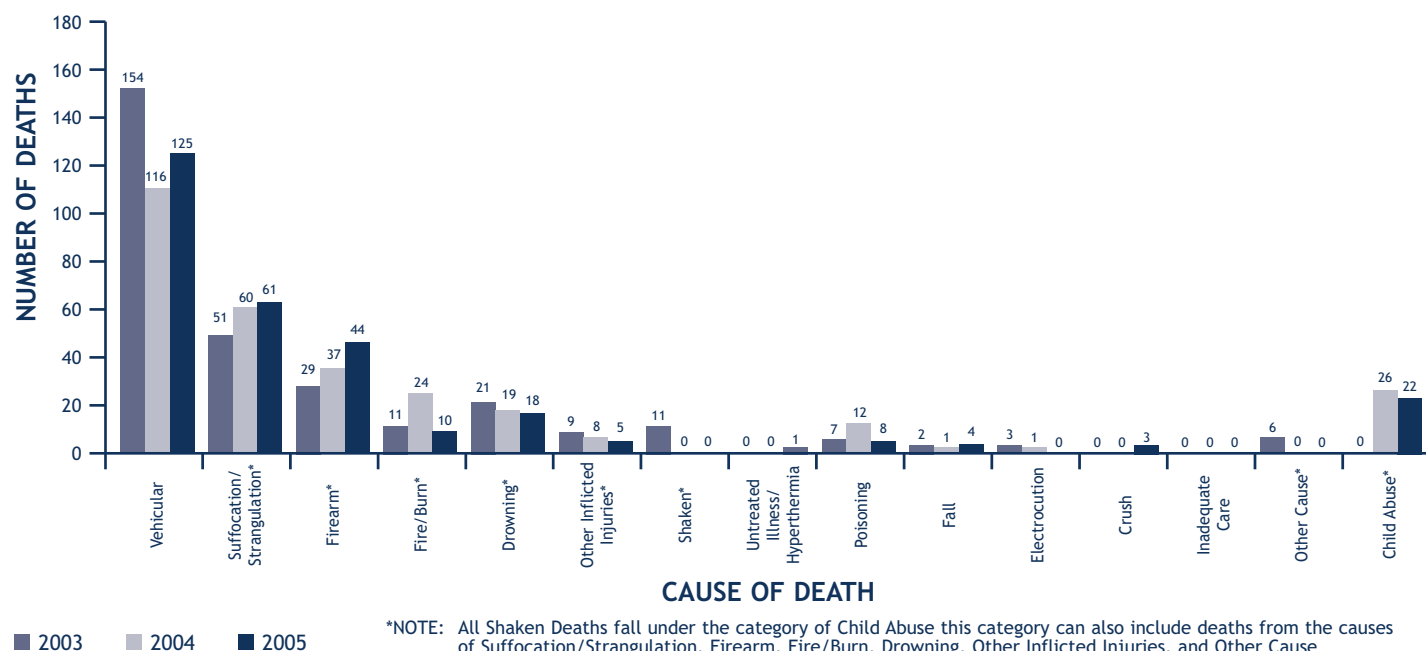
### MISSOURI INCIDENT FATALITIES BY SEX AND RACE

SEX	2003	2004	2005	RACE	2003	2004	2005
FEMALE	456	422	590	WHITE	779	705	699
MALE	608	562	400	BLACK	267	257	275
UNKNOWN	1			OTHER	19	22	16
	1065	984	990		1065	984	990

### MISSOURI INCIDENT FATALITIES BY MANNER



## LEADING CAUSE OF INJURY DEATHS



## ILLNESS/NATURAL CAUSE DEATHS

## ALL ILLNESS/NATURAL CAUSE DEATHS OTHER THAN SIDS

“The infant mortality rate has declined steadily during the last decade, due in part, to improved medical technology and public health outreach...Infants are more likely to die before their first birthday if they live in unsafe homes and neighborhoods or have inadequate nutrition, health care or supervision.”

*-Kids Count Missouri, Citizens for Missouri's Children and Children's Trust Fund*

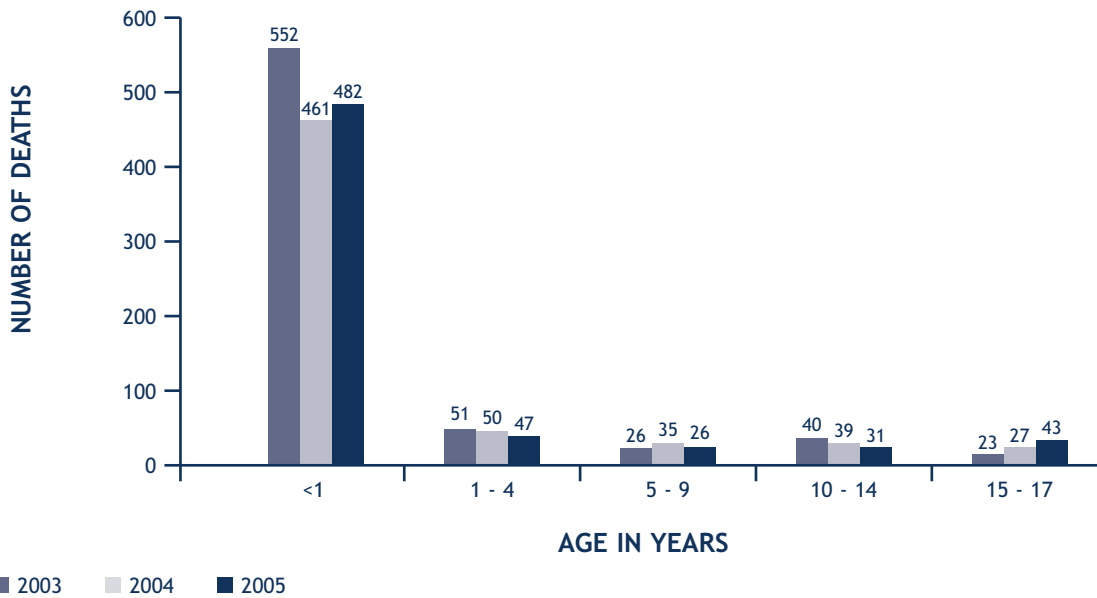
Illness/natural causes, other than SIDS, were responsible for the death of 629 Missouri children in 2005, representing 64% of all Missouri incident child fatalities.

Most child deaths are related to illness or other natural cause. Illness/natural cause deaths include prematurity, congenital anomalies, infection and other conditions. The vast majority of natural cause deaths occur before the first year of life and are often related to prematurity or birth defects.

## INFANT MORTALITY

In the United States, the leading causes of infant mortality include congenital malformations, deformations and chromosomal abnormalities (congenital anomalies) and disorders related to short gestation and low birth weight, not elsewhere classified (low birth weight). Also among the leading causes of infant death are Sudden Infant Death Syndrome (SIDS), newborn affected by maternal complications, newborn affected by cord and placental complications, and unintentional injuries. Nationally, the infant mortality rate for 2004 was 6.76 infant deaths per 1,000 live births. (*National Center for Health Statistics*)

## ILLNESS/NATURAL CAUSE DEATHS BY AGE



## ILLNESS/NATURAL CAUSE DEATHS BY SEX AND RACE

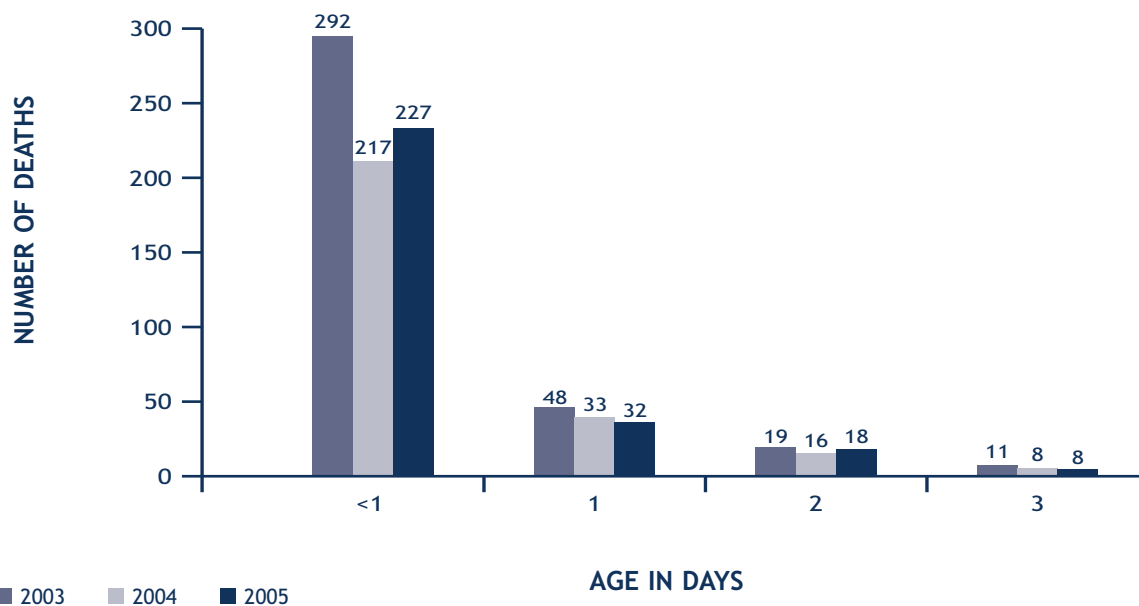
SEX	2003	2004	2005	RACE	2003	2004	2005
FEMALE	323	268	267	WHITE	489	424	436
MALE	368	344	362	BLACK	187	174	182
UNKNOWN	1			OTHER	16	14	11
	692	612	629		692	612	629

In Missouri, in 2004, the infant death rate decreased from 7.8 to 7.5 per 1,000 live births. However, the Missouri infant death rate remains above the 2004 national rate of 6.6 per 1,000 live births. The decrease in 2004 infant mortality primarily reflected a decrease in babies weighing less than 1.1 pounds. Approximately 90% of these small babies die, so even a relatively small decrease of 48 such births had a major impact on infant mortality. (*Missouri Department of Health and Senior Services*)

In Missouri, in 2005, prematurity was the cause of **282** infant deaths, representing 45% of all illness/natural cause deaths, other than SIDS. Of those, **208** (74%) were born at 25 weeks or less gestation and **52** (25%) of those were born at less than 20 weeks gestation.

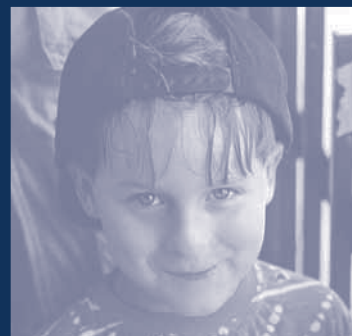
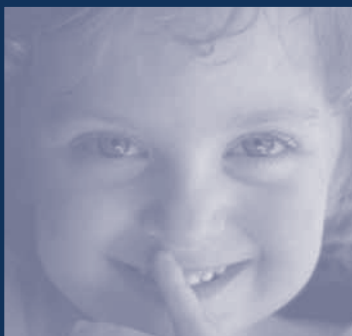
In 2005, congenital anomalies were the cause of **145** infant deaths, representing 23% of all illness/natural causes, other than SIDS. Infants less than one year of age comprised the majority (77%) of the illness/natural cause deaths in 2005, with **482**. Of those, **285** (59%) occurred within the first three days of life and **227** (47%) occurred within 24 hours of birth.

## CHILDREN AGE THREE DAYS OR LESS THAT DIED OF ILLNESS/NATURAL CAUSES



## CHILDREN LESS THAN ONE YEAR WHO DIED OF ILLNESS/NATURAL CAUSES BY SEX AND RACE

SEX	2003	2004	2005	RACE	2003	2004	2005
FEMALE	251	197	208	WHITE	387	313	325
MALE	300	264	274	BLACK	154	136	148
UNKNOWN	1			OTHER	11	12	9
	552	461	482		552	461	482





# NATURAL CAUSE DEATHS IN INFANTS LESS THAN ONE YEAR AS REPORTED ON CFRP DATA FORMS

AGE AT DEATH	
0 - 24 hours	244
24 - 28 hours	22
48 hours - 6 weeks	119
6 weeks - 6 months	58
6 months - 1 year	22
Not Answered	17

GESTATIONAL AGE AT BIRTH	
<20 weeks	52
20 - 25 weeks	156
26 - 30 weeks	60
31 - 37 weeks	51
>37 weeks	65
Unknown	62
Not Answered	36

BIRTH WEIGHT IN GRAMS	
<750 grams (<1lb 10oz)	184
750 - 1,499 grams (1lb 10oz - 3lbs 5oz)	58
1,500 grams - 2,499 grams (3lbs 5oz - 5lbs 5oz)	55
>2,500 grams (>5lbs 5oz)	55
Unknown	91
Not Answered	39

MULTIPLE BIRTHS	
Yes	74
No	345
Not Answered	63

MEDICAL COMPLICATIONS DURING PREGNANCY	
Yes	8
No	13
Not Answered	15

SMOKING DURING PREGNANCY	
Yes	3
No	12
Not Answered	21

DRUG USE DURING PREGNANCY	
Yes	6
No	17
Not Answered	13

ALCOHOL USE DURING PREGNANCY	
Yes	0
No	16
Not Answered	20

“Infant morality is the most sensitive index we possess in social welfare.”  
*-Julia Lathrop, Children’s Bureau, 1913*

## FETAL AND INFANT MORTALITY REVIEW (FIMR) IN MISSOURI

The death of a child, especially the youngest, most vulnerable infant, is viewed as a sentinel event that is a measure of a community's overall social and economic well being, as well as its health. During the last decade, two methods for examining these sentinel deaths at the local level have emerged: child fatality review (CFR) and fetal and infant mortality review (FIMR).

The rate of death among infants in Missouri has shown a steady decline during the last decade, from 9.6 to 7.5 per 1,000 live births (DHSS). In most communities, infant deaths due to natural causes such as prematurity, congenital anomalies, SIDS, infection, and other disease processes have traditionally been viewed as medically complicated and not preventable. Indeed, they are medically complicated, but research and experience have demonstrated that improvements in resources and systems that serve the needs of infants, mothers and families can produce significant improvements in outcomes. The emergence of FIMR in our state has the potential to bring about significant improvements in maternal and infant outcomes and further reduce infant deaths.

*Fetal mortality* is defined as the the death of a fetus in utero at 20 weeks or more gestation. It is viewed as an important indicator of overall perinatal health. The health of the mother plays a significant role in maintaining a healthy pregnancy. Conversely, maternal medical complications of pregnancy are adversely associated with fetal deaths.

*Infant mortality* is defined as the death of a child before one year of age. The infant mortality rate is associated with a variety of social and economic factors, as well as medical/health conditions. Nationally, two-thirds of these deaths occur during the first 28 days of life, the neonatal period.

The FIMR process in our state conforms to the principles and guidelines set by the National Fetal and Infant Mortality Review Program, which is a collaborative effort between the American College of Obstetricians and Gynecologists and the Maternal and Child Health Bureau, Health Resources and Services Administration. The overall goal of Fetal and Infant Mortality Review (FIMR) is to enhance the health and well being of women, infants and families by improving the community resources and service delivery systems available to them.

Many sources provide information for FIMR reviews. A maternal interview is sought from the family. Medical records, including hospital and physician records, as well as any existing medical examiner records are abstracted. All identifying information; i.e., families, providers, and institutions, is removed. A summary of the case is prepared and presented to the case review team. Members of the FIMR case review team represent a broad range of professional organizations and public and private agencies (health, welfare, education and advocacy) that provide services and resources for women, infants and families. The reviews produce findings and recommendations that, typically, are presented to a community action team, comprised of other members of the community with the political will and fiscal resources to create large-scale system changes.

One of the first FIMR programs in Missouri was established in 2003, by the Infant Mortality Workgroup of the Maternal, Child and Family Health Coalition of Metropolitan St. Louis. After reviewing infant mortality data and risk factors in the St. Louis region and national best practices, a FIMR program was piloted in three zip codes in North St. Louis City and County. In December 2005, the St. Louis FIMR was granted approval from the Missouri Department of Health and Senior Services to expand its review of fetal and infant deaths to include all zip codes in St. Louis City and County.

In 2004, the Maternal, Child Health Coalition of Greater Kansas City piloted a Fetal and Infant Mortality Review program in the five zip codes served by the Kansas City Healthy Start project. As in the case of the St. Louis FIMR, these areas were chosen based on a combination of need and community capacity.

The presence of FIMR programs serving the major metropolitan areas in Missouri will bring about a more thorough understanding of the contributing factors of fetal and infant deaths, as well as a larger engagement of community health professionals and institutions to improve maternal and child health throughout our state.

While there are many similarities between CFRP and FIMR, there are distinct and important differences, including basic human concern and advocacy. In Missouri, FIMR and CFRP will be distinct, but complementary, systems, sharing a common mission and some promising opportunities for collaboration. It is anticipated that, when appropriate, the two systems will be able to collaborate in significant ways, such as joint reporting of aggregate findings, sharing recommendations with media and the public and improving systems and resources for children, mothers and families in our state.



For more information, visit:

[www.dhss.mo.gov/FIMR](http://www.dhss.mo.gov/FIMR)

[www.stl-mcfhc.org](http://www.stl-mcfhc.org)

## SUDDEN UNEXPECTED INFANT DEATHS

In 2005, there were 123 sudden, unexpected deaths of infants less than one year of age in Missouri.

### Representative Cases:

- **Infants should be placed on their backs to sleep.**

The mother of a six-week-old infant fell asleep on the sofa, with the baby sleeping in a prone position on her chest. When she awoke, he was unresponsive.

A four-month-old infant was placed on a sofa, on his stomach, to sleep. When the father tried to wake him up, he was unresponsive.

A three-month-old infant was left in the care of an unlicensed child care provider, who placed her in a playpen on her stomach to sleep. An hour later, she found the baby unresponsive.

- **The safest place for infants to sleep is in a standard crib with a firm mattress and no soft bedding.**

A four-week-old infant, one of twins, was placed on his stomach to sleep, on top of two bed pillows in a “pack-n-play.” He was found a short time later, face down in the pillow.

A two-month-old infant was sleeping on her back between her parents, in their bed. She was found unresponsive, with a pillow partially covering her face.

A ten-week-old infant was sleeping on his back in an adult bed, with two older siblings, ages 2 and 6. He was found unresponsive with his face covered by the leg of one of the older children.

In 2005, there were **123** sudden, unexpected deaths of infants under the age of one year reported to the Child Fatality Review Program. Based on autopsy, investigation and CFRP panel review, **46** were diagnosed as Sudden Infant Death Syndrome (SIDS), **38** Unintentional Suffocation, **17** Illness/Natural Cause, and **16** could not be determined. **Five** infants were found to be victims of Homicide and **one** infant’s death was determined to be an Accident resulting from exposure to excessive heat and illness. Those **six** deaths are discussed under “Fatal Child Abuse and Neglect.”

## INVESTIGATION OF SUDDEN, UNEXPECTED INFANT DEATHS

Each year in the United States, more than 4,500 infants die suddenly of no obvious cause. Half of these sudden, unexpected infant deaths are diagnosed as Sudden Infant Death Syndrome (SIDS), the leading cause of all deaths among infants <1 year of age. Largely because of the national Back to Sleep campaign’s effort to reduce prone sleeping rates, SIDS rates have declined by more than 50% since 1990. However, studies have shown that since 1999, some deaths previously classified as SIDS are now classified as accidental suffocation or undetermined. This finding suggests that changes in reporting

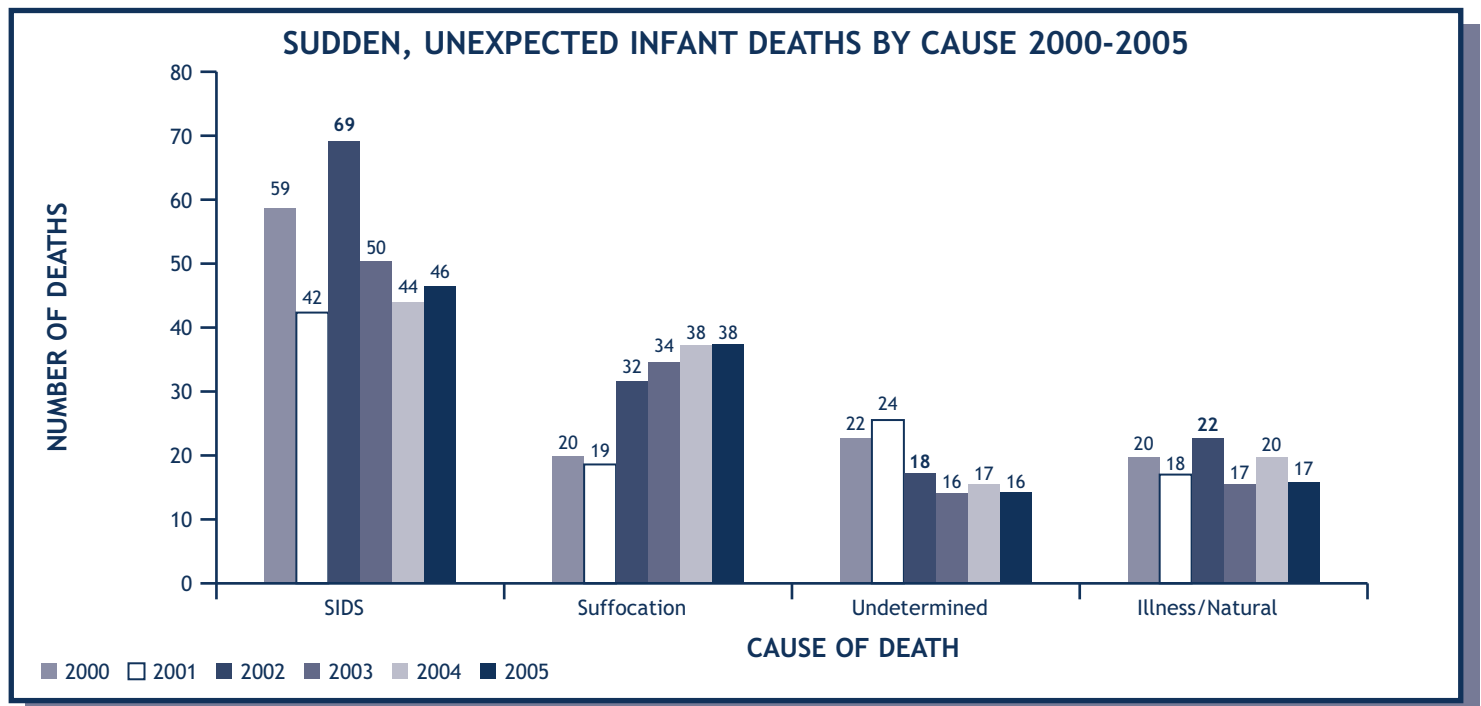
of cause of death may account for part of the recent decrease in SIDS rates and that, in fact, the rate of infant deaths in the United States has not changed significantly during this time period.

Researchers continue promising efforts to identify the common vulnerability of certain infants to sudden death, while the medical community struggles to define universally acceptable guidelines for certification of sudden, unexpected infant death. Inaccurate investigation and classification of cause and manner of death impedes prevention efforts, because researchers cannot adequately monitor national trends or evaluate prevention programs.

In 2004, the Centers for Disease Control and Prevention launched an initiative to improve the investigation and reporting of sudden, unexpected infant deaths. The CDC collaborated with federal and state agencies and organizations, representing medical examiners, coroners, death scene investigators, EMS, law enforcement, forensic nurses, SIDS researchers, and parents who have experienced the death of an infant. In March 2006, CDC released the Sudden Unexplained Infant Death Investigation (SUIDI) reporting form for state and local use in infant death scene investigations. In collaboration with a team of national experts, CDC developed a comprehensive training curriculum and materials for infant death scene investigations. CDC will use these materials to train investigators and death certifiers in how to consistently collect data at the death scene and accurately report their findings on the death certificate. CDC will conduct five regional Train-the-Trainer Academies over two years, beginning in 2006. (CDC)

In Missouri, the Death-Scene Investigative Checklist is one of the many tools available to professionals involved in the investigation and evaluation of all child deaths. Refined and updated over time, the Checklist provides a guide to the investigator, regardless of experience level, to consistently collect the information necessary for an accurate determination of the cause and manner of death. The Investigative Checklist and other tools and information are available at ([www.dss.mo.gov/stat/forms.htm](http://www.dss.mo.gov/stat/forms.htm)), or by calling 800-487-1626.

Of the **123** sudden, unexpected infant deaths in Missouri in 2005, a scene investigation was completed in **114** cases; **88** of those (71.5% of the total) were completed by a medical examiner or coroner or their investigator.



## SUDDEN UNEXPECTED INFANT DEATHS BY SEX AND RACE

SEX	2003	2004	2005	RACE	2003	2004	2005
FEMALE	42	50	52	WHITE	82	85	84
MALE	75	69	71	BLACK	33	32	37
				OTHER	2	3	2
	117	119	123		117	120	123

## SUDDEN INFANT DEATH SYNDROME

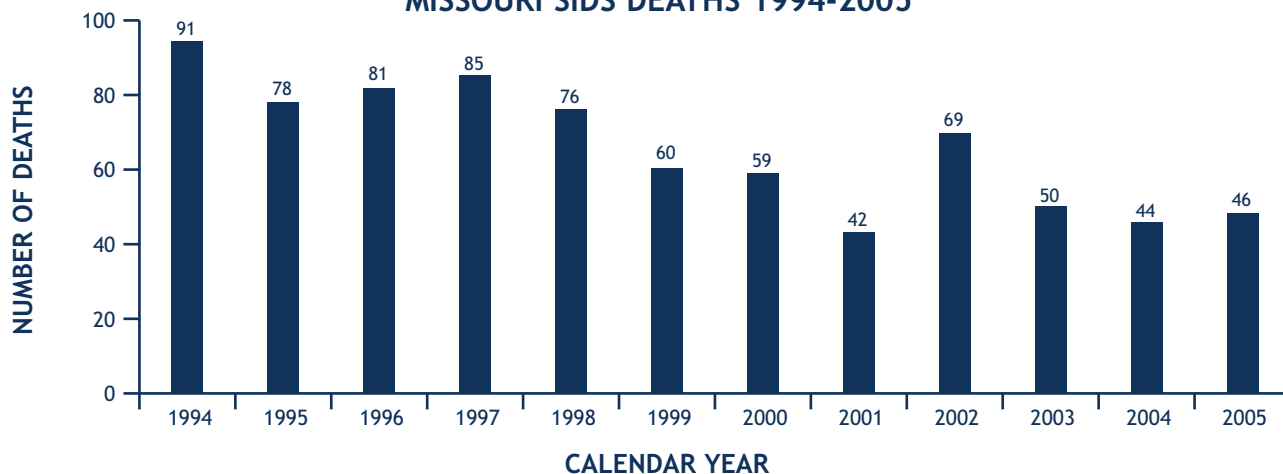
In 2005, Sudden Infant Death Syndrome (SIDS) was the cause of death of 46 Missouri Infants.

SIDS is a diagnosis of exclusion; there are no pathological markers that distinguish SIDS from other causes of sudden infant death. There are no known warning signs or symptoms. Ninety percent of SIDS deaths occur in the first six months of life, with a peak at 2-4 months. While there are several known risk factors, the cause or causes of SIDS are unknown at this time.

The Triple Risk Model for SIDS is often used to describe the confluence of events that may lead to the sudden death of an infant. This model involves a vulnerable infant (one with a subtle defect involving brainstem arousal responses), at a critical development period (less than six months of age), exposed to environmental challenges to which he/she does not respond (such as overheating, tobacco smoke, or prone sleeping).

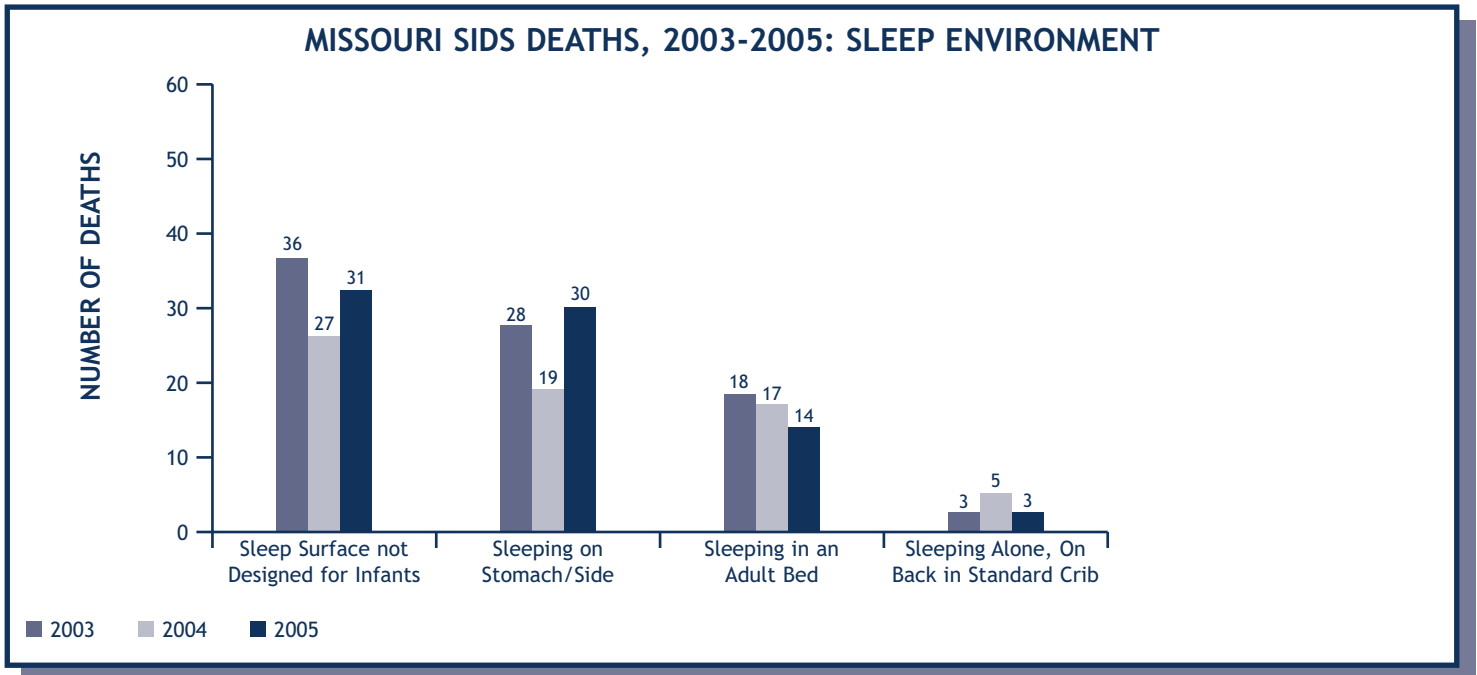
SIDS is generally considered a natural manner of death. SIDS is not caused by spitting up, choking or minor illnesses, such as a cold. SIDS is not caused by immunizations; it is not contagious; SIDS is not child abuse. SIDS is not the cause of every sudden or unexpected infant death.

## MISSOURI SIDS DEATHS 1994-2005



While the cause of Sudden Infant Death Syndrome (SIDS) is unknown, several factors have been identified that increase an infant's risk for sudden death:

- Tummy (prone) or side sleeping
- Bed Sharing
- Soft sleep surfaces
- Loose bedding
- Smoking
- Preterm and low birth weight infants



Recent research findings have resulted in accelerated progress in the understanding of sudden unexpected infant death. Unsafe sleep arrangements are now known to be a highly significant risk factor occurring in the large majority of cases of sudden infant death diagnosed as SIDS, unintentional suffocation and cause undetermined. Unsafe sleep arrangements include any sleep surface not designed for infants, sleeping with head or face covered, and sharing a sleep surface.

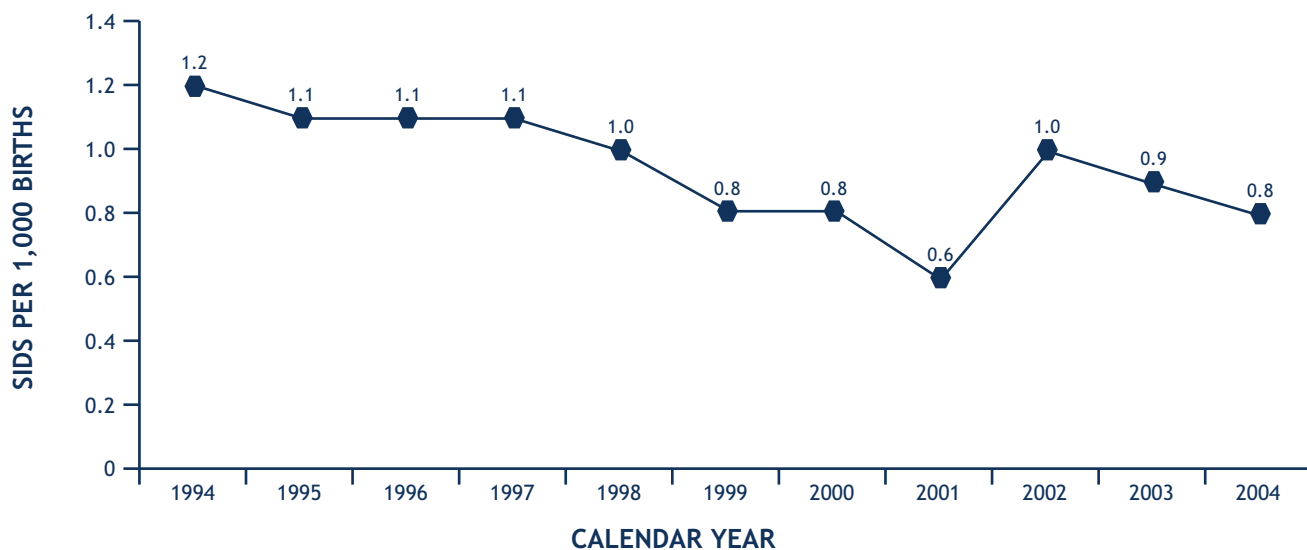
In Missouri, of the **46** sudden, unexpected infant deaths reviewed by county CFRP panels and diagnosed as SIDS in 2005, **30** (65%) were known to be sleeping on their stomach or side. **Thirty-one** (67%) of those infants were not sleeping in a standard crib on a firm mattress and **14** were known to be sleeping in an adult bed. Only **three** (6.5%) sudden, unexpected infant deaths diagnosed as SIDS, were known to be sleeping alone on their backs, in a standard crib with head and face uncovered.

**“The truth on how these deaths occur must be known and shared for there to be any opportunity to prevent the next infant’s death. We need to work in a kind and caring way, but still need the truth on how the death occurred - nothing less...We have an obligation to our infants and their families to seek only truth - and offer only honesty.”**

**-Pat Tackitt, RN, MS**  
**Wayne County, Michigan CDRT Coordinator**



## SIDS RATE 1994-2004

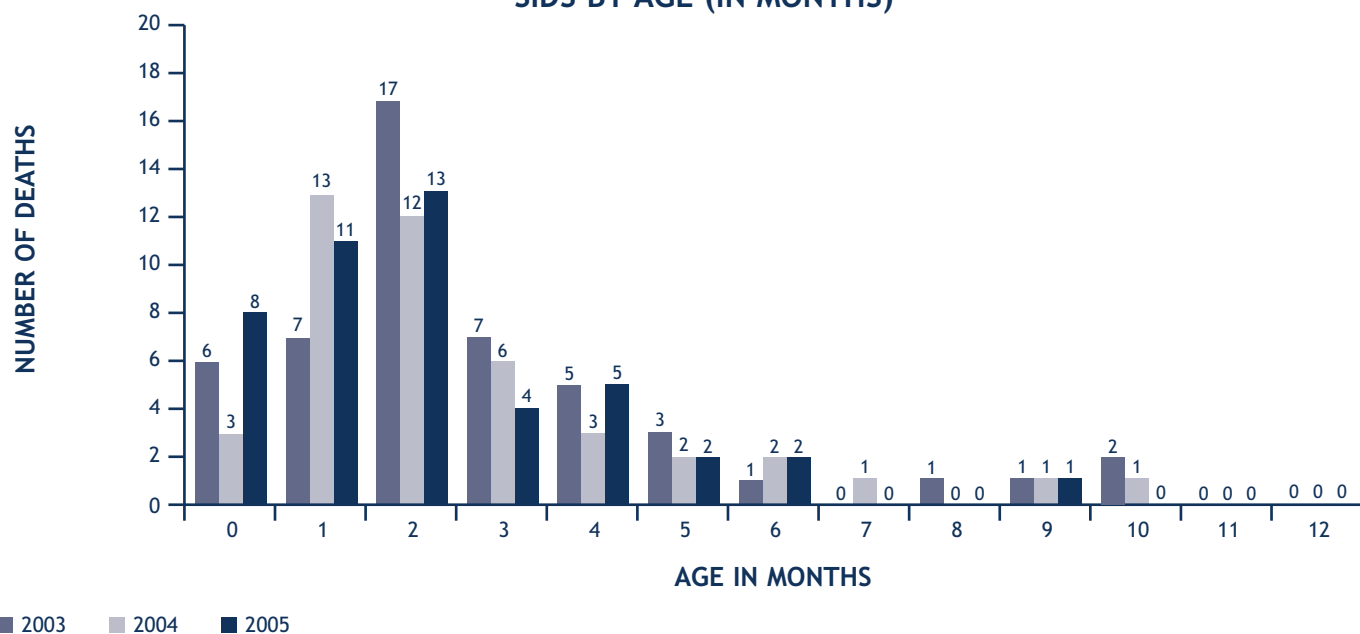


\*2005 data not available at time of report

## SIDS FATALITIES BY SEX AND RACE

SEX	2003	2004	2005	RACE	2003	2004	2005
FEMALE	14	19	21	WHITE	38	28	34
MALE	36	25	25	BLACK	11	15	11
				OTHER	1	1	1
	50	44	46		50	44	46

## SIDS BY AGE (IN MONTHS)



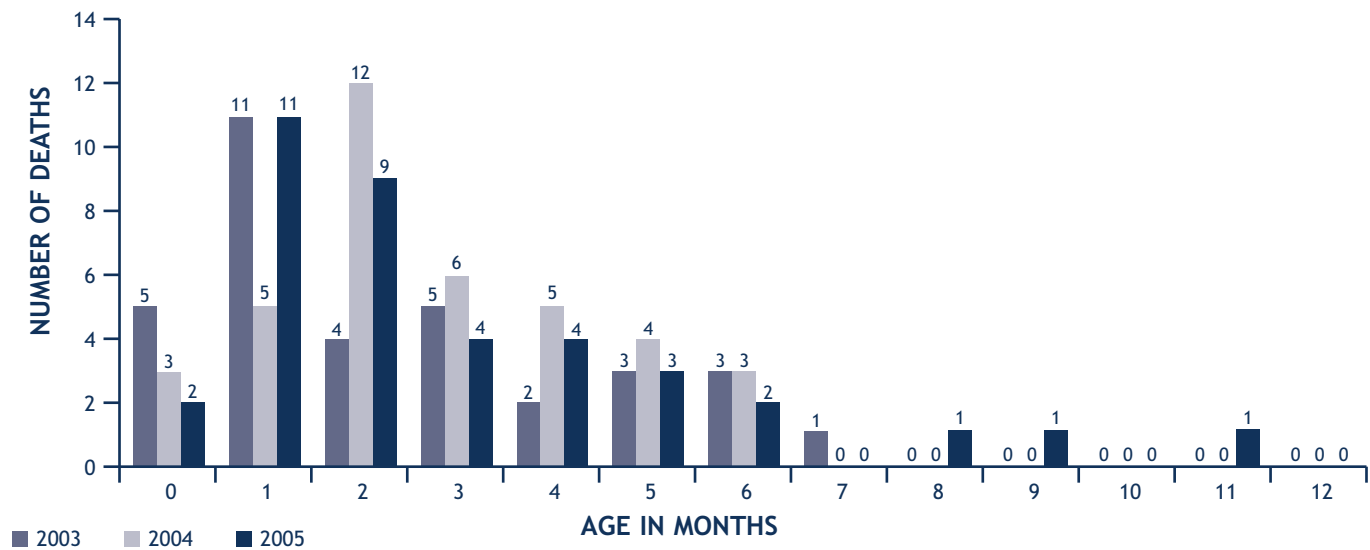
## SUFFOCATION IN INFANTS

Unintentional Suffocation was the cause of death of 38 Missouri infants in 2005.

Most infant deaths due to **suffocation**, are directly related to an unsafe sleep environment. Many parents and caregivers do not understand the risks associated with unsafe sleeping arrangements. Infants can suffocate when their faces become positioned against or buried in a mattress, cushion, pillow, comforter or bumper pad, or when their faces, noses and mouths are covered by soft bedding, such as pillows, quilts, comforters and sheepskins. In most cases of unintentional suffocation, the sleeping environment is such that most normal infants would not have been able to move themselves out of the unsafe circumstances.

An **overlay** is a type of unintentional suffocation that occurs when an infant is sleeping with one or more persons (bed sharing with adults or other children) and someone rolls over on them. A suffocation due to overlay can be verified by one of the following means: (1) the admission of someone who was sharing the bed, that they were overlying the infant when they awoke or (2) the observations of another person. Most infant deaths involving possible or suspected overlay are classified as **undetermined** cause, because the actual position of the infant and other person at the time of death were not witnessed.

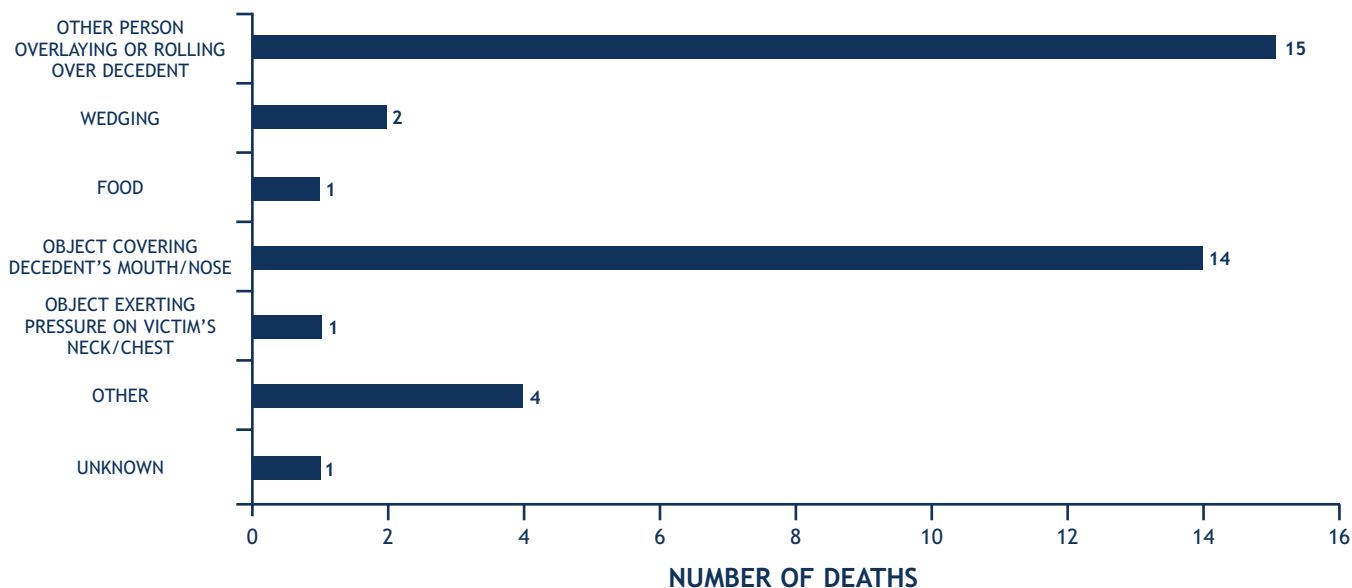
UNINTENTIONAL SUFFOCATION, UNDER 1 YEAR OF AGE BY AGE (IN MONTHS)



UNINTENTIONAL SUFFOCATION BY SEX AND RACE

SEX	2003	2004	2005	RACE	2003	2004	2005
FEMALE	15	16	12	WHITE	18	23	27
MALE	19	22	26	BLACK	16	14	10
				OTHER		1	1
	34	38	38		34	38	38

## CAUSE OF UNINTENTIONAL STRANGULATION/SUFFOCATION DEATHS



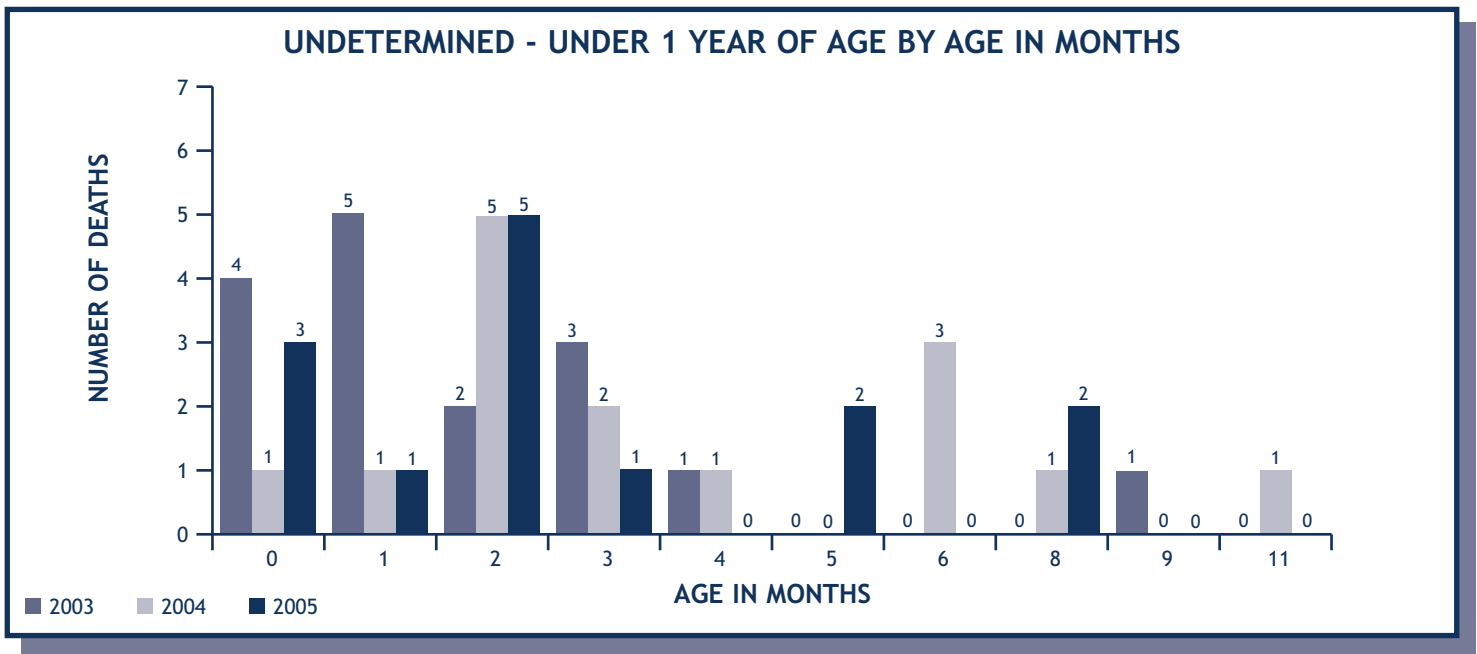
## UNDETERMINED

In 2005, the cause of death of 16 Missouri infants could not be determined.

In some cases, even the most thorough and careful scene investigation and autopsy do not produce a definitive cause of death, because risk factors are present that are significant enough to have possibly contributed to the death. One such risk factor is an unsafe or challenged sleep environment. Recent studies of epidemiological factors associated with sudden unexpected infant deaths, demonstrate that prone sleeping and the presence of soft bedding near the infant's head and face pose very strong environmental challenges, by limiting dispersal of heat or exhaled air in the vast majority of cases. However, the extent to which such environmental challenges play a role in a particular sudden infant death, often cannot be determined. Sudden unexpected infant deaths involving an unsafe sleep environment are classified as **undetermined**, when unintentional suffocation is not conclusively demonstrated by the scene investigation.

## UNDETERMINED BY SEX AND RACE

SEX	2003	2004	2005	RACE	2003	2004	2005
FEMALE	8	6	9	WHITE	13	16	6
MALE	8	11	7	BLACK	2	1	10
				OTHER	1		
	16	17	16		16	17	16

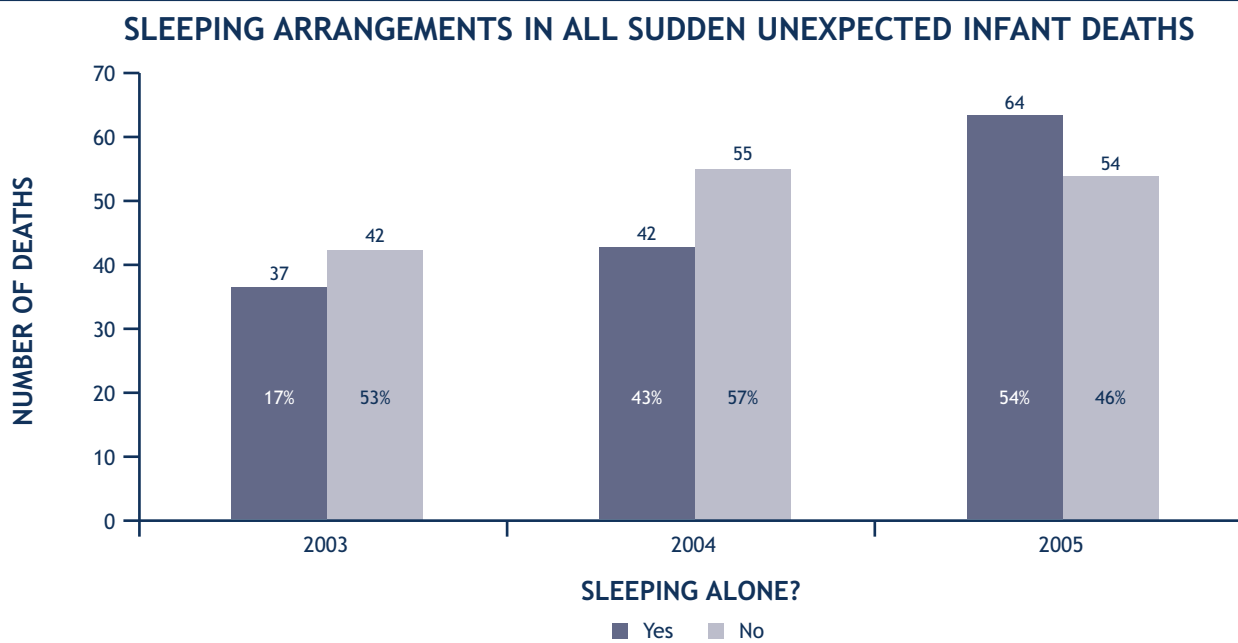


## REDUCING THE RISK OF SIDS

In October 2005, the American Academy of Pediatrics issued a revision of their recommendations on reducing the risk of SIDS. The updated policy statement, “The Changing Concept of Sudden Infant Death Syndrome: Diagnostic Coding Shifts, Controversies Regarding the Sleeping Environment and New Variables to Consider in Reducing Risk,” addresses several issues that have become relevant since the AAP published a statement in March 2000.

- The American Academy of Pediatrics no longer recognizes side sleeping as a reasonable alternative to fully supine (lying on back). Studies found that the side sleep position is unstable and increases the chances of the infant rolling onto his or her stomach. The caregiver should use the back sleep position during every sleep period.
- Bed sharing is not recommended during sleep. Infants may be brought into bed for nursing or comforting, but should be returned to their own crib or bassinet, when the parent is ready to return to sleep. However, there is growing evidence that room sharing (infant sleeping in a crib in parent’s bedroom) is associated with a reduced risk of SIDS. The AAP recommends a separate, but approximate, sleeping environment.
- Research now indicates an association between pacifier use and a reduced risk of SIDS, which is why the revised policy recommends the use of pacifiers at nap time and bedtime, throughout the first year of life.





## A SAFE SLEEPING ENVIRONMENT FOR YOUR BABY

The American Academy of Pediatrics, the Consumer Product Safety Commission and the National Institute of Child Health and Human Development have revised their recommendations on safe bedding practices when putting infants down to sleep. Here are the revised recommendations to follow for infants under 12 months:

### Safe Bedding Practices for Infants

- Place baby on his/her back on a firm tight-fitting mattress in a crib that meets current safety standards.
- Remove pillows, quilts, comforters, sheepskins, stuffed toys, bumper pads and other soft products from the crib.
- Consider using a sleeper or other sleep clothing as an alternative to blankets, with no other covering.
- If using a blanket, put baby with feet at the foot of the crib. Tuck a thin blanket around the crib mattress, reaching on so far as the baby's chest.
- Make sure your baby's head remains uncovered during sleep.
- Do not place baby on a waterbed, sofa, adult mattress, pillow or other soft surface to sleep.



Placing babies to sleep on their backs instead of their stomachs, has been associated with a dramatic decrease in deaths from Sudden Infant Death Syndrome (SIDS). Babies have been found dead on their stomachs with their faces, noses and mouths covered by soft bedding, such as pillows, quilts, comforters and sheepskins. However, some babies have been found dead with their heads covered by soft bedding, even while sleeping on their backs.

## **RISK REDUCTION RECOMMENDATIONS:**

*The following risk reduction recommendations are from SIDS Resources, Inc., the SIDS Alliance and the American Academy of Pediatrics.*

### **For parents:**

- *Sleep position:* Infants should be placed on their backs to sleep throughout the first year of life.
- *Sleep environment:* Do not place infants on adult beds to sleep.
- *Bedding:* Avoid soft bedding. Place baby on a firm tight-fitting mattress in a crib that meets current safety standards. Avoid placing the baby on soft quilts or comforters, sofas, pillows, waterbeds or sheepskins. Stuffed animals should not be placed in the crib with the baby. Avoid using bumper pads.
- *Temperature:* To avoid overheating, do not overdress the baby or over-bundle the baby.
- *Smoking:* Avoid smoking during pregnancy. Create a smoke-free environment around the baby after birth.
- *Breastfeeding:* Mothers should be encouraged to breastfeed. However, infants placed in adult beds to sleep are at increased risk of suffocation and overlay.
- *Prenatal Care and well-baby care.*

### **For community leaders and policy makers:**

- *Support Safe-Sleep campaigns.*

### **For professionals:**

- Newborn nursery personnel, physicians, nurses and public health officials should instruct all new parents and child care personnel in safe sleeping practices and other strategies to reduce the risk of SIDS.

### **For Child Fatality Review Panels:**

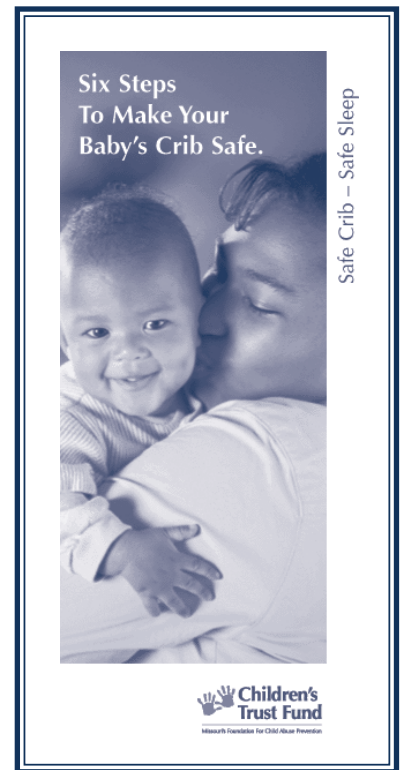
- All sudden, unexplained deaths of infants <1 year of age require autopsy by a child death pathologist and review by a county CFRP panel. The data pertaining to infant deaths is critical in identifying risk factors for SIDS and providing targeted prevention messages for parents.



## SOMETHING WE CAN DO: THE SAFE CRIB-SAFE SLEEP CAMPAIGN

The safest place for an infant to sleep is in a standard crib, on his or her back without soft bedding or toys of any kind. The American Academy of Pediatrics, the Consumer Product Safety Commission and the National Institute of Child Health and Human Development have revised their recommendations on safe bedding practices when putting infants down to sleep to incorporate this new information. Unfortunately, many parents have not received this information and, for a variety of reasons, are unable to provide a safe crib for their infant.

The Safe Crib Project provides a safe, new crib to families in need, along with critical parent education about safe sleep arrangements for infants. In communities throughout Missouri, social service agencies, community health agencies, hospitals and similar organizations have collaborated to implement the Safe Crib Project, using funding from Children's Trust Fund. The goal of this innovative project is to save infant lives and support families. For additional information about Children's Trust Fund, active Safe Crib Projects or funding opportunities, please contact Children's Trust Fund at 573-751-5147 or visit [www.ctf4kids.org](http://www.ctf4kids.org).



### RESOURCES AND LINKS:

- American Academy of Pediatrics Policy Statement news release and a related reviewed article . . . . . [www.aap.org/ncepr/sids.htm](http://www.aap.org/ncepr/sids.htm)  
[www.aap.org/ncepr/revisedsids.pdf](http://www.aap.org/ncepr/revisedsids.pdf)  
[www.aap.org/ncepr/sidsarticle.pdf](http://www.aap.org/ncepr/sidsarticle.pdf)
- National SIDS/Infant Death Resource Center . . . . . [www.sidscenter.org](http://www.sidscenter.org)
- St. Louis Safe Sleep Task Force . . . . . [www.stlsafesleepforbabies.com](http://www.stlsafesleepforbabies.com)
- SIDS Resources, Inc., 135 West Monroe, St. Louis, MO 63122  
 Counseling and support, research, training and education . . . . . [www.sidsresources.org](http://www.sidsresources.org)
- Missouri Children's Trust Fund  
 Safe Crib-Safe Sleep campaign . . . . . [www.ctf4kids.org](http://www.ctf4kids.org)
- Sudden Unexpected Infant Death: A Guide for Missouri Coroners and Medical Examiners . . . . . [www.dss.mo.gov/stat/suid.pdf](http://www.dss.mo.gov/stat/suid.pdf)
- Fetal-Infant Mortality Review . . . . . [www.dhss.mo.gov/FIMR](http://www.dhss.mo.gov/FIMR)



## MOTOR VEHICLE FATALITIES

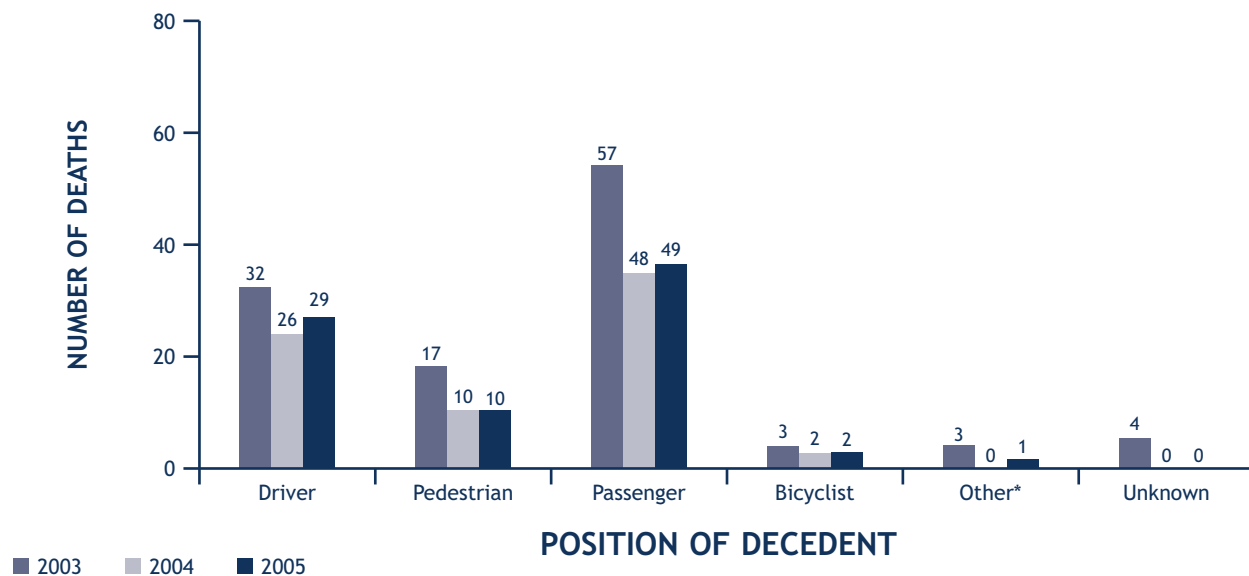
There were 137 motor vehicle fatalities among Missouri children in 2005. Of those, 94 were reviewed by CFRP panels.

In the United States, motor vehicle crashes are the leading cause of injury death for children ages 1-14, and the second leading cause of injury death for children ages 0-1. In 2005, motor vehicle crashes remained the leading cause of unintentional injury deaths among Missouri's children. Motor vehicle fatalities include drivers and passengers of motor vehicles, pedestrians who are struck by motor vehicles, bicyclists and occupants in any other form of transportation, including all-terrain vehicles. Of the **137** motor vehicle deaths among Missouri children in 2005, **125** were reported to the Child Fatality Review Program; **94** (76%) were reviewed by a local CFRP panel. (**Three** of the **94** motor vehicle fatalities were determined to be Homicides, following the review, and are discussed in that section of this report.)

MOTOR VEHICLE FATALITIES BY SEX AND RACE

SEX	2003	2004	2005	RACE	2003	2004	2005
FEMALE	60	51	43	WHITE	127	99	108
MALE	87	63	79	BLACK	19	13	13
				OTHER	1	2	1
	147	114	122		147	114	122

MOTOR VEHICLE FATALITIES BY POSITION AT TIME OF INJURY (AS REPORTED BY CFRP)



In 2005, **one** "Other" motor vehicle fatality refers to a fetus inutero. The crash caused the mother to go into labor, resulting in premature delivery.

# MOTOR VEHICLE FATALITIES AS REPORTED ON CFRP DATA FORM 2

TYPE OF VEHICLE			
Car	48	All-Terrain Vehicle	4
Truck/RV/Van/SUV	24	Other Farm Vehicle	1
Motorcycle	1	Not Applicable	10
Bicycle	2	Not Answered	1

CONDITION OF ROAD	
Normal	67
Loose Gravel	2
Wet	11
Ice or Snow	2
Other	3
Unknown	5
Not Answered	1

RESTRAINT USED	
Present, Not Used	40
None in Vehicle	0
Used Correctly	16
Used Incorrectly	4
Unknown	13
Not Applicable	18

PRIMARY CAUSE OF ACCIDENT	
Speeding	21
Carelessness	17
Mechanical Failure	2
Weather	27
Driver Error	9
Other	12
Unknown	3

ALCOHOL AND/OR OTHER DRUG USE	
Decedent Impaired*	5
Driver of Decedents Vehicle Impaired	8
Driver of Other Vehicle Impaired	3
Not Applicable	56
Not Answered	19

\*NOTE: In four cases, decedent was the driver of the vehicle.

HELMET USE	
Helmet Worn	1
Helmet Not Worn	8
Not Applicable	74
Not Answered	8

## DRIVER AND PASSENGER FATALITIES

### Representative Cases:

- **Children age 4 years and under should ride appropriately restrained in a child safety seat.**

A 9-year-old girl was riding unrestrained in the front seat of a vehicle being driven by her step-father, who was speeding. When the traffic ahead of him stopped suddenly, the driver swerved into the on-coming lane of traffic, striking another vehicle head-on.

- **The most significant risk factors among teen drivers are inexperience, low rates of seatbelt use and alcohol.**

A 16-year-old was the driver of a motor vehicle, racing with another vehicle. He lost control of his vehicle and struck a guard rail. The vehicle rolled and the driver, who was not wearing a seatbelt, was ejected and pinned beneath his vehicle. His blood alcohol was .105. He was pronounced dead at the scene.

Of the **94** reviewed motor vehicle deaths in Missouri in 2005, **77** (85%) involved drivers and passengers. The National Center for Injury Prevention and Control lists two factors as most significant in contributing to motor vehicle-related fatalities among children: (1) unrestrained children and (2) drunk drivers. ("Unrestrained children" refers to infants and toddlers who are not riding in properly installed car seats and older children whose seatbelts are not fastened.)

The National Safe Kids Campaign reports that 40% of children, age 4 and under, ride unrestrained, placing them at twice the risk of death and injury as those riding restrained. Missouri law requires restraint for children under age 4 and allows for primary enforcement, meaning that a police officer can stop and cite the driver solely for violation of the restraint law. **Twenty-eight** of the child passenger fatalities in Missouri in 2005, were known to be riding unrestrained. The most common reasons restrained children are killed are misuse of child safety seats and premature graduation to safety belts.

Of the **94** reviewed motor vehicle fatalities, **16** involved a victim or a driver who was impaired. According to the CFRP Data Form 2's received in 2005, **five** of these deaths involved a teen victim who was impaired. **Four** of those were drivers of a vehicle that wrecked, and the other **one** was a drunk pedestrian who stepped out in front of a moving vehicle. There were **eight** deaths where the driver of the victim's vehicle was impaired; **seven** of those fatalities involved a teen riding with a driver who was impaired. The **three** other deaths, involved collisions with other vehicles, driven by an impaired driver.

Teenagers are three to four times more likely to be involved in a crash than the driving population at large. The highest fatality rates are found among teenage drivers. According to the National Center for Injury Prevention and Control, the most significant risk factors among teenage drivers are inexperience, low rates of seatbelt use and alcohol. Inexperienced drivers lack the perception, judgement and decision-making skills that take practice to acquire.

Missouri's graduated licensing system took effect in January 2001. In states with GDL systems, teen fatality rates have been reduced as much as 43%. It is important to note, however, that graduated licensing must be combined with education for parents and teens about risks to teenage drivers, including the dangers of underage drinking, speeding, inattention and low seatbelt use.

Seatbelts are known to reduce the risk of fatal motor vehicle injury by as much as 45%. There is a low rate of seatbelt use among teens. **Fifty-six** (62%) of the reviewed motor vehicle fatalities among children in Missouri in 2005, were teenagers age 15-17. Of those **30** (54%) were known to be unrestrained at the time of the crash; **15** were passengers and **15** were drivers.

## PEDESTRIAN FATALITIES

### Representative Cases:

- **Young children require constant supervision.**

A three-year-old was playing outdoors, unsupervised, when she attempted to run across the street to a neighbor's house. She was struck by a truck traveling at a high rate of speed through her subdivision. She was pronounced dead at the scene.

A two-year-old child was in the care of his father, who allowed him to play outside, unattended. The child wandered onto the road in front of the home and was struck by a passing vehicle. He was pronounced dead at the scene.

Of the **94** reviewed motor vehicle fatalities among Missouri children in 2005, **10** were pedestrians. **Three** of those were age 4 and under; **one** was between the ages of 5 and 9.

## PEDESTRIAN DEATHS AMONG CHILDREN

- Children are particularly vulnerable to pedestrian death, because they are exposed to traffic threats that exceed their cognitive, developmental, behavioral, physical and sensory abilities. This is exacerbated by the fact that parents overestimate their children's pedestrian skills. Children are impulsive and have difficulty judging speed, spatial relations and distance.
- Toddlers (ages 1 and 2 years) sustain the highest number of pedestrian injuries, primarily due to their small size and limited traffic experience. More than half of all pedestrian injuries involving toddlers occur when a vehicle is backing up. Young children are at increased risk of pedestrian death and injury in driveways and other relatively protected areas.
- Children, age 5 through 9, are at the greatest risk from pedestrian death and injury. Children, ages 14 and under, are more likely to suffer pedestrian injuries in residential areas with high traffic volume, a higher number of parked vehicles on the street, higher posted speed limits, few pedestrian-control devices and few alternative play areas.

- Practical, skills-based pedestrian safety training efforts have demonstrated improvements in children's traffic behavior. Environmental modifications are effective at reducing pedestrian-motor-vehicle related incidents. (*Safe Kids*)

## BICYCLE-RELATED FATALITIES

### Representative Cases:

- Children should always wear helmets when riding bicycles.

A six-year-old child was following a truck on her bicycle, when it suddenly began backing up. The child was struck and she died of crushing head injuries.

A five-year-old was riding his bicycle on a busy street, when he was struck by a car. He was not wearing a helmet and suffered massive head injuries.

Motor vehicle fatalities among Missouri children also include **2** bicyclists who died in 2005, when they were either struck by a motor vehicle or fell. **Both** of those fatalities were reviewed by local panels. **One** of the bicycle-related fatalities was reported to be wearing a helmet.

The single most effective safety device available to reduce head injury and death from bicycle crashes is a helmet. In the event of a crash, wearing a bicycle helmet reduces the risk of serious head injury by as much as 85% and the risk for brain injury by as much as 88%. Unfortunately, national estimates on helmet usage suggest that only 25% of children, ages 5-14, wear a helmet when riding. Helmet usage is lowest among children ages 11 to 14. (*Safe Kids*) The primary strategies to increase bike helmet use include education, legislation and helmet-distribution programs. (*National Center for Injury Prevention and Control*)

## FATALITIES INVOLVING ALL-TERRAIN VEHICLES

### Representative Cases:

- Children younger than 16 should not ride adult-size all-terrain vehicles.

A 12-year-old was riding an ATV, when he attempted to cross a dry creek. The vehicle overturned and landed on top of him, crushing his head. He was not wearing a helmet.

- Children should always wear motorcycle-style helmets when riding ATV's.

A 17-year-old was driving an ATV on a rural road, with a 12-year-old girl as a passenger, when she lost control. The ATV overturned, throwing both girls off. The driver hit a pole and suffered a fatal head injury. Neither of the girls was wearing a helmet.

**Four** of the **94** motor vehicle fatalities reviewed by CFRP panels in 2005, involved all-terrain vehicles (ATV's). All-terrain vehicles are motorized cycles, with three or four balloon-style tires, designed for off-road use on a variety of terrains. Although ATV's give the appearance of stability, the three-wheeled design is especially unstable on hard surfaces. The ATV stability is further compromised by a high center of gravity, a poor or absent suspension system, and no rear-wheel differential. The danger is magnified, because these vehicles can attain substantial speeds (30-50 mph). As bigger and faster ATV's have been introduced into the market over the past decade, ATV-related deaths and injuries have increased substantially in every age group. In the United States, children account for nearly one-third of all ATV-related injuries.

Most injuries involving ATV's occur when the driver loses control and the vehicle rolls over, the driver or passenger is thrown off, or there is a collision with a fixed object. Head injuries account for most of the deaths, which are instantaneous. In 2005, **none** of the **four** Missouri children who died in ATV-related accidents, was wearing a helmet.

ATV's are inherently difficult to operate. Children under the age of 16 do not have the cognitive and physical capabilities to operate these vehicles safely. In June 2000, the American Academy of Pediatrics (AAP) issued a policy statement which included recommendations for legislation in all state prohibiting the use of two and four-wheeled off-road vehicles by children younger than 16 years, as well as a ban on the sale of new and used three-wheeled ATV's. Currently, 27 states have minimum age requirements for operation of an ATV. Missouri is one of only three states that require ATV operators to be 16 or older. In 2005, **three** of **four** ATV fatalities among Missouri children were younger than 16. (AAP, *Safe Kids, National Center for Injury Prevention and Control*)

## **PREVENTION RECOMMENDATIONS:**

### For parents:

- Children, 12 years old and younger, should always ride appropriately restrained in the back seat of all passenger vehicles, particularly vehicles with airbags.
- Children under 8 should ride in a booster seat, unless they are 80 pounds or 4'9" tall.
- Never allow children under age 12 to cross streets alone.
- Always model and teach proper pedestrian behavior.
- Children under the age of 16 should never ride or operate ATV's of any size, including youth-sized ATV's.
- Never leave children alone in a motor vehicle, even when they are asleep or restrained.

For community leaders and policy makers:

- Community leaders should encourage enforcement of existing child restraint laws.
- Missouri lawmakers should strengthen child restraint laws by mandating the following:
  - Include children age 4 through 15 in the child restraint law; thereby, making restraint use in the age group subject to primary enforcement.
  - Raise the penalty for violation of child restraint laws to at least \$100 and one driver’s license point.
  - Remove the provision of the vehicle equipment regulations that states if there are not enough safety belts for all passengers, they are not in violation for failure to use.

For professionals:

- Facilitate and implement programs that educate parents on appropriate restraint of children in motor vehicles, and provide child safety seats to those who do not have them, such as safety seat check-up events.
- Facilitate and implement programs that educate parents and children on helmet use, instructions on fitting helmets properly and events that provide helmets at little or no cost.



For Child Fatality Review Panels:

- Ensure that speed limits, and laws prohibiting driving while intoxicated, along with other traffic safety laws, are strictly enforced.

**RESOURCES AND LINKS:**

American Academy of Pediatrics . . . . .	<a href="http://www.aap.org">www.aap.org</a>
Children’s Safety Network . . . . .	<a href="http://research.marshfieldclinic.org">http://research.marshfieldclinic.org</a>
National Safe Kids Campaign . . . . .	<a href="http://www.safekids.org">www.safekids.org</a>
National Center for Injury Prevention and Control . . . . .	<a href="http://www.cdc.gov/ncipc">www.cdc.gov/ncipc</a>
Harborview Injury Prevention and Research Center . . . . .	<a href="http://depts.washington.edu">http://depts.washington.edu</a>
National Highway Transportation Safety Administration. . . . .	<a href="http://www.nhtsa.dot.gov">www.nhtsa.dot.gov</a>
Missouri Coalition for Roadway Safety . . . . .	<a href="http://www.saveMolives.org">www.saveMolives.org</a>
The Think First Injury Prevention Foundation . . . . .	<a href="http://www.thinkfirst.org">www.thinkfirst.org</a>
Kids ‘N Cars . . . . .	<a href="http://www.kidsncars.org">www.kidsncars.org</a>



## KEEPING CHILDREN SAFE IN AND AROUND MOTOR VEHICLES

Attention concerning child safety and motor vehicles has focused largely on protecting children as they ride in and on vehicles of all kinds, primarily motor vehicles on public roads. The Missouri CFRP reviews and collects data on motor vehicle fatalities among children as passengers and drivers, pedestrians and bicyclists. However, children who are unsupervised in or around motor vehicles that are not in traffic are at an increased risk for injury and death.

The Centers for Disease Control (CDC) examined injuries and fatalities among children involved in non-traffic, motor vehicle-related incidents from July 2000-June 2001, and documented 78 fatal injuries. Of the fatally injured children, most were age <4 years. The most common type of fatal incident was exposure to excessive heat inside a motor vehicle, followed by being backed over and being hurt when a child put a motor vehicle in motion.

The CDC study recommended several areas for possible prevention, including education campaigns aimed at parents and caregivers that communicate the following: (1) Ensure adequate supervision when children are playing in areas near parked motor vehicles. (2) Never leave children alone in a motor vehicle, even when they are asleep or restrained. (3) Keep motor vehicles locked in a garage or driveway and keep keys out of children's reach.

Kids 'N Cars maintains a national database to evaluate the circumstances and consequences of leaving children unattended in or around motor vehicles. Go to [www.kidsncars.org](http://www.kidsncars.org) for more information.

### SOMETHING WE CAN DO: "NOT EVEN FOR A MINUTE" CAMPAIGN



Children's Trust Fund points out that a child left alone in an automobile is a car accident that can be prevented. For additional information or to order education materials contact CTF at 573-751-5147 or visit the web site at [www.ctf4kids.org](http://www.ctf4kids.org).

#### RESOURCES AND LINKS:

CDC. Injuries and Deaths Among Children Left Unattended in or Around Motor Vehicles-United States, July 2000-June 2001. MMWR 2002;51: No.26.

Kids 'n Cars. . . . . [www.kidsncars.org](http://www.kidsncars.org)



## UNINTENTIONAL SUFFOCATION/STRANGULATION, CHILDREN AGE 1 YEAR AND OLDER

Unintentional Suffocation/Strangulation was the cause of death of 3 Missouri children, age one year and older.

### Representative Cases:

- Parents and caretakers often underestimate the degree of supervision required by young children.

A three-year-old child was eating a hotdog, when he began to choke. Attempts to remove the hotdog were unsuccessful. He quickly became unconscious and was rushed to the hospital, where he was pronounced.

A four-year-old child with several physical disabilities was left alone briefly, playing with a balloon. He fell forward with his face resting on top of the balloon. He was unable to move from that position, because of his disability.

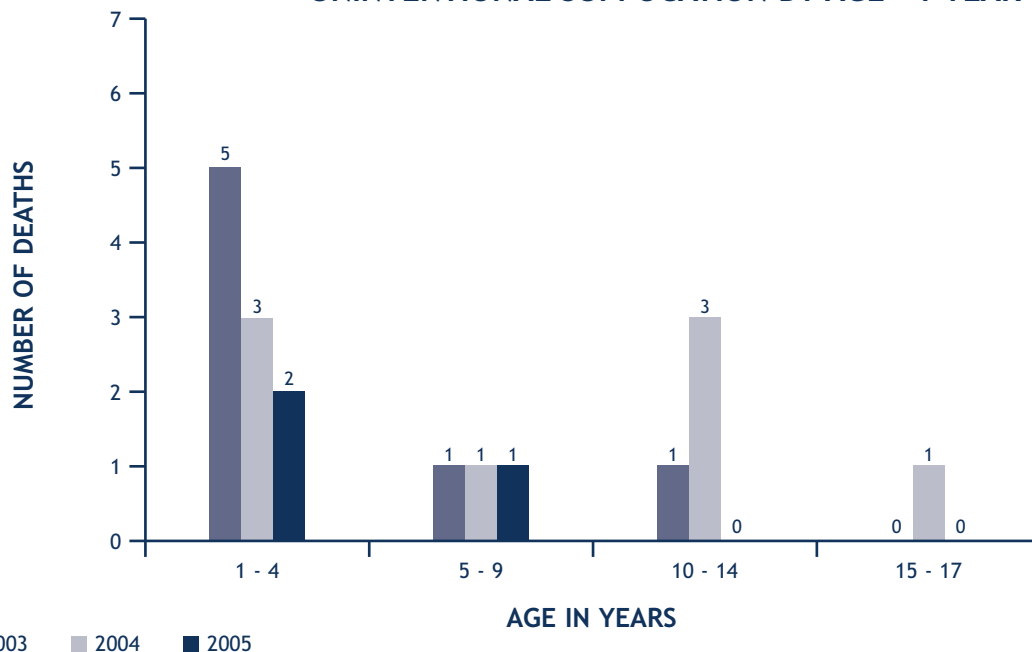
*Note: The suffocation/strangulation deaths as reported in this section are unintentional. Suffocation/strangulation deaths may also be intentional, inflicted by others (homicide), self-inflicted (suicide) or of an undetermined manner.*

## AIRWAY OBSTRUCTION INJURIES AMONG YOUNG CHILDREN: CHOKING, SUFFOCATION AND STRANGULATION

The majority of airway obstruction injuries occur among infants less than one year of age. In the United States, it is estimated that as many as 900 infants, whose deaths are attributed to Sudden Infant Death Syndrome (SIDS) each year, are found in potentially suffocating environments, frequently on their stomachs, with their noses and mouths covered by soft bedding. Children placed in adult beds are at increased risk for airway obstruction injury as well. (*Safe Kids*) Sudden, unexpected deaths of infants under the age of one year, including suffocations related to unsafe sleep environments, are described and discussed in “Sudden, Unexpected Infant Deaths.”

Airway obstruction injuries occur when children are unable to breathe normally, because food or objects block their internal airways (choking); materials block or cover their external airways (suffocation); or items become wrapped around their neck or exert pressure on their neck and interfere with breathing (strangulation). Young children, especially those under age three, are particularly vulnerable to airway obstruction injury and death, due to the small size of their upper airways, their relative inexperience with chewing, and their natural tendency to put objects in their mouths. Additionally, infants' inability to lift their heads or extricate themselves from tight places, puts them at greater risk. In Missouri, in 2005 **three** children over the age of one year died of unintentional airway obstruction injuries. Of those, **two** were young children under the age of four years.

## UNINTENTIONAL SUFFOCATION BY AGE &gt;1 YEAR

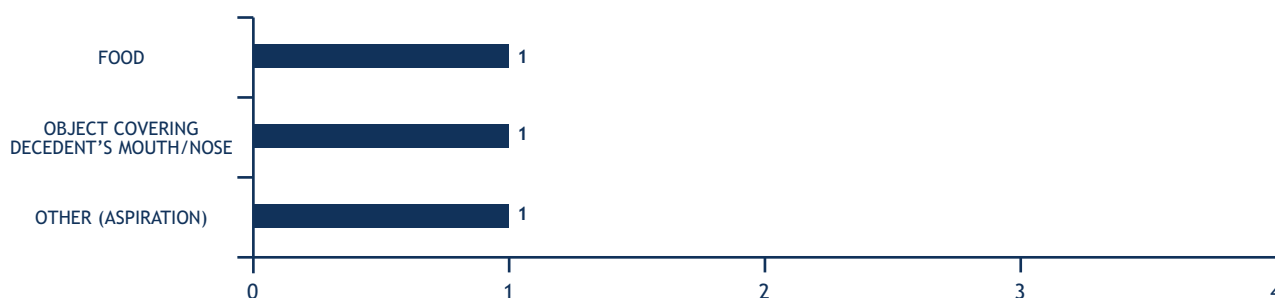


## UNINTENTIONAL SUFFOCATIONS BY SEX AND RACE

SEX	2003	2004	2005	RACE	2003	2004	2005
FEMALE	3	0	0	WHITE	7	7	3
MALE	4	8	3	BLACK	0	1	0
	7	8	3		7	8	3

The majority of childhood choking injuries are associated with food. Children are at risk from choking on small, round foods such as hot dogs, candies, nuts, grapes, carrots and popcorn. Children can easily choke or aspirate small objects, most often, toys, beads, balloons and coins. In the United States, cribs and play yards are involved in nearly 53% of all nursery product-related deaths among children ages 5 and under. Cribs (primarily older, used cribs) are responsible for about 26 strangulation and suffocation deaths each year. (*Safe Kids*)

## CAUSE OF UNINTENTIONAL STRANGULATION/SUFFOCATION DEATHS &gt;1 YEAR



Airway obstruction injuries can also result from entanglement or entrapment. Children strangle in openings big enough for parts of their bodies, but too small for their heads. These include spaces in bunk beds, cribs, playground equipment, baby strollers, carriages and high chairs. Since 1990, at least 57 children in the United States, nearly all ages 3 and under, have died due to entrapment in bunk beds. Children can also become entangled in clothing drawstrings and window covering cords, resulting in strangulation.

Young children can also become entrapped or wedged in a small space, such as between a bed or mattress and a wall. They can also become entrapped in airtight spaces, such as a cedar chest, unused refrigerator or freezer.

Fortunately, safety laws and regulations protect children from airway obstruction injury hazards. For example, the Child Safety Protection Act bans any toy intended for use by children under age 3, that may pose a choking, aspiration or ingestion hazard requires choking-hazard warning labels on packaging for these items, when intended for use by children ages 3-6 years. In 1999, the U.S. Consumer Product Safety Commission (CPSC) issued a mandatory standard for bunk beds to address entrapment hazards. The CPSC has also issued voluntary guidelines for drawstrings on children's clothing, to prevent children from strangling in the neck and waist drawstrings of upper outerwear garments, such as jackets and sweatshirts.

## **PREVENTION RECOMMENDATIONS:**

- Remove drawstrings from children's clothing.
- Tie up or remove all cords for window coverings.

### **For community leaders and policy makers:**

- Support legislation that requires improved product design, or removal of hazardous products from the market.

### **For professionals:**

- Information about unintentional suffocation/strangulation hazards to young children, including unsafe sleep practices should be widely disseminated.
- Teach parents CPR and the Heimlich Maneuver for infants and young children.

### **For Child Fatality Review Panels:**

- Report any child death that appears to involve a product hazard to Consumer Product Safety Commission. The CPSC can also be accessed for product safety research assistance; contact STAT for assistance.

## **RESOURCES AND LINKS:**

Consumer Product Safety Commission . . . . .	<a href="http://www.cpsc.gov">www.cpsc.gov</a>
National Safe Kids Organization . . . . .	<a href="http://www.safekids.org">www.safekids.org</a>
American Academy of Pediatrics . . . . .	<a href="http://www.aap.org">www.aap.org</a>
Missouri Children's Trust Fund, "Safe Crib-Safe Sleep" Campaign . . . . .	<a href="http://www.ctf4kids.org">www.ctf4kids.org</a>

## **UNINTENTIONAL FIRE/BURN FATALITIES**

Unintentional Fire/Burn injuries were the cause of nine deaths of Missouri children in 2005.

### **Representative Cases:**

- **Lighters, matches and other sources of fire should be kept locked away from children.**

A five-year-old started a fire while playing with a lighter and paper. The five-year-old and his father were able to get out of the home. However, the father was intoxicated and unaware that his two-year-old daughter was still inside the house and she died in the fire.

- **Properly installed and maintained smoke detectors are effective in preventing fatalities.**

A seven-year-old child died in a residential fire believed to be caused by careless handling of smoking materials. She was unable to escape from the second floor residence. There were no working smoke detectors.

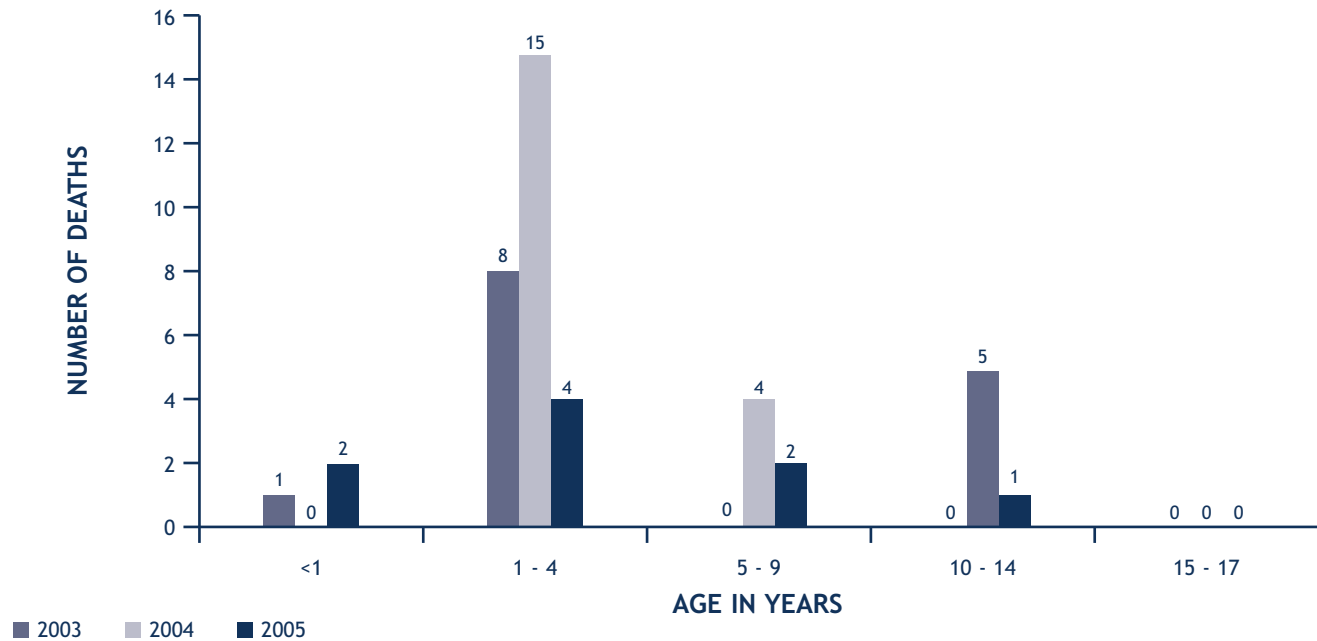
- **Children who are chronically neglected are at great risk of severe and fatal injury.**

A toddler pulled an electric skillet and its contents onto his head. He succumbed to extensive thermal burns. This family had a lengthy history of abuse and negligent treatment.

Each year in the United States, more than 600 children ages 14 and under die, and nearly 47,000 are injured, in fires. In Missouri in 2005, **nine** children died as a result of unintentional fire/burn injury; of those, **six** children were under the age of five. Fire and burn injuries are the third leading cause of unintentional injury deaths among Missouri children.

Children, especially those age 5 and under, are at the greatest risk from home fire-related death and injury, and are more than twice as likely to die in a fire, than the rest of the population. Young children have a limited ability to react promptly and properly to a fire; they are unable to act, or act irrationally. They may attempt to hide or run from adults attempting to rescue them. More than half the children under the age of 5, who die in home fires, are asleep at the time of the fire. (*Safe Kids*)

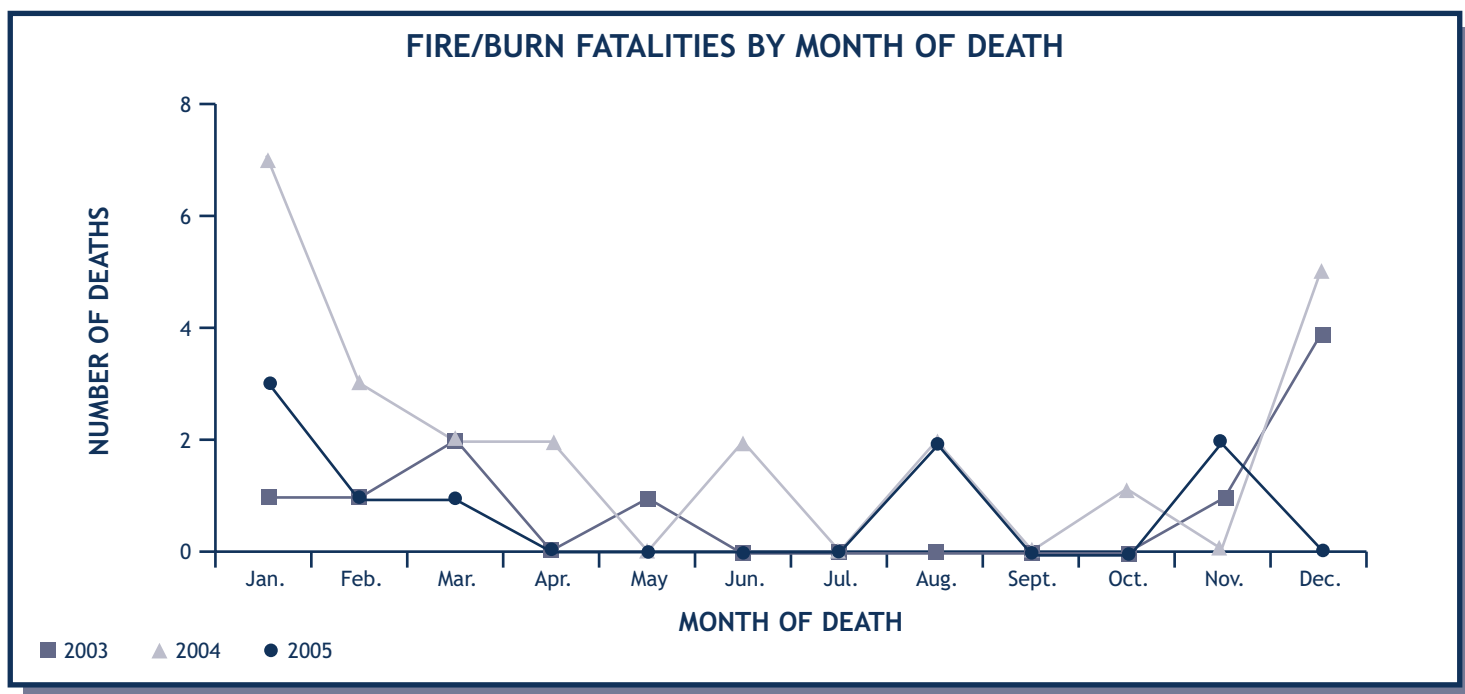
## FIRE/BURN DEATHS BY AGE



## FIRE/BURN DEATHS BY SEX AND RACE

SEX	2003	2004	2005	RACE	2003	2004	2005
FEMALE	4	13	4	WHITE	6	21	6
MALE	5	11	5	BLACK	3	3	3
	9	24	9		9	24	9

Residential fires and related fatalities tend to occur more often during cold-weather months, when the use of heating systems is at a peak.



## FIRE/BURN DEATHS AMONG CHILDREN

- In the United States, a working smoke alarm is not present in two-thirds of the residential fires in which a child is injured or killed. Smoke detectors were reported to be present in only **4** of the **9** fatal Missouri fires reviewed by county CFRP panels in 2005, of those, only **2** were known to be in working order. Approximately 90% of homes in the U.S. have a smoke alarm; however, these alarms are not always properly maintained.
- Children from low-income families are at greater risk for fire-related death and injury, due to factors such as lack of working smoke alarms, substandard housing, use of alternative heating sources and economic constraints on providing adequate adult supervision. (*Safe Kids*)
- Children living in rural area have a dramatically higher risk of dying in a residential fire. (*United States Fire Administration*)
- Nationally, over 30% of the fires that kill young children are started by children playing with matches or lighters. These fires tend to begin in the bedroom or living room, where children are often left alone to play. (*National Center for Injury Prevention and Control*) In Missouri, in 2004, **3** children are known to have died in fires started by other children playing with matches or lighters.

## JUVENILE FIRESETTING

In Missouri in 2005, **one** child was known to have started a fire in his home by playing with a lighter. The United States Fire Administration points out that events such as this are not isolated incidents and the number of fires set by children is growing. In a typical year in the United States, 300 people are killed and \$300 million in property is destroyed in fires set by children. Children themselves are usually the victims of these fires, accounting for 85 of every 100 fatalities.



It is generally recognized that the motivation for firesetting can be considered in two categories: (1) *Curiosity firesetters* are usually 2-7 year olds, whose fascination leads them to play with matches or lighters. These children do not recognize the consequences of the behavior. They usually respond to educational services, including educational programs, firehouse tours, etc. (2) *Problem firesetters* may also be very young, but generally are 5-17 years old. Their behavior may be considered pathological, a “cry for help.” These children appear to light fires because of emotional or mental disturbances ranging from mild to severe. When firesetting appears to be related to emotional problems, referrals should be made to mental health services. (*United States Fire Administration*)

Regardless of the motivation, firesetting behavior must always be taken very seriously. The United States Fire Administration recommends that parent contact their local fire department or state fire services for help. Local fire departments throughout the state are adopting various approaches to critical elements of prevention: (1) identification/referral of the firesetter, (2) evaluation, and (3) intervention.

## FIRE/BURN FATALITIES AS REPORTED ON CFRP DATA FORMS

SMOKE ALARM PRESENT	
Yes	4
No	2
Unknown	2
Not Applicable	1
Not Answered	0

SMOKE ALARM IN WORKING ORDER	
Yes	2
No	0
Unknown	3
Not Applicable	3
Not Answered	1

FIRE STARTED BY	
Decedent	1
Other	0
No One	2
Unknown	3
Not Answered	3

ACTIVITY OF PERSON STARTING FIRE	
Playing	1
Smoking	1
Not Applicable	6
Not Answered	1

SOURCE OF FIRE	
Lighter	1
Cigarette	1
Combustibles	1
Faulty Wiring	3
Unknown	2
Not Answered	1

MULTIPLE FIRE DEATHS	
Yes	4
No	5

FOR A STRUCTURE FIRE, WHERE WAS THE DECEDENT FOUND?	
Hiding	1
In Bed	4
Other	2
Not Answered	2

## SOMETHING WE CAN DO: FIRE PREVENTION AWARENESS DAY

When 3 children died in a house fire in St. Louis, CFRP panel members and other community leaders talked about finding a way to target that neighborhood for a fire safety campaign that would provide an appropriate prevention response to those tragic deaths. Smoke detectors, properly installed and maintained, have proven extremely effective in preventing fatalities. For the last 10 years, volunteers have brought “Fire Prevention Awareness Day” to high-risk neighborhoods throughout the region. Working from a staging area where families can gather for food, fun and prevention education, firefighters and volunteers go door to door, installing smoke detectors for fresh batteries and providing fire safety information. Media attention for these events helps spread the prevention message.

### PREVENTION RECOMMENDATIONS:

#### For parents:

- Young children require vigilant supervision.
- Keep matches, gasoline, lighters and all other flammable materials locked away and out of children’s reach.
- Install smoke alarms on every level and in every sleeping area. Test them once a month. Replace batteries at least once a year.
- Plan and practice several fire escape routes from each room of the home and identify an outside meeting place. Practicing an escape plan may help children who become frightened and confused in a fire, to escape to safety.

#### For community leaders and policy makers:

- Enact laws that require smoke detectors in new and existing housing, and making landlords responsible for ensuring that rental properties have working smoke detectors.
- Enforce building codes and conduct inspections.

#### For professionals:

- Smoke detector giveaway programs have proven useful when high-risk areas are targeted. Implement such a program in your community.
- Implement a multi-faceted community campaign to prevent burn injuries. Target a well-defined population with a very specific message.

#### For Child Fatality Review Panels:

- When reviewing a child death that is the result of a residential fire, determine if the local building code requires smoke detectors in residences, and if a working smoke detector was present in the home. Use that information to develop an action plan, such as working to change the code or pursuing prosecution of a negligent landlord. Special attention should be paid to the issue of adult supervision, when investigating deaths of young children in house fires.

RESOURCES AND LINKS:

Missouri Division of Fire Safety . . . . . www.dfs.dps.mo.gov  
United States Fire Administration . . . . . www.usfa.fema.gov  
National Safe Kids Campaign . . . . . www.safekids.org  
Harborview Injury Prevention and Research Center . . . . . depts.washington.edu/hiprc

UNINTENTIONAL DROWNINGS

In 2005, 18 children drowned in Missouri.

Representative Cases:

- **Personal flotation devices should be worn at all times in and around open water.**

A two-year-old child was playing in a pond, wearing a life jacket, with several children and adults. He was taken out of the water and the vest removed for a picnic. After the picnic, the child was playing near the pond. A short time later, the other children began to notice that he was gone. He was eventually found in the pond.

- **Infants and young children require constant supervision while in a bathtub.**

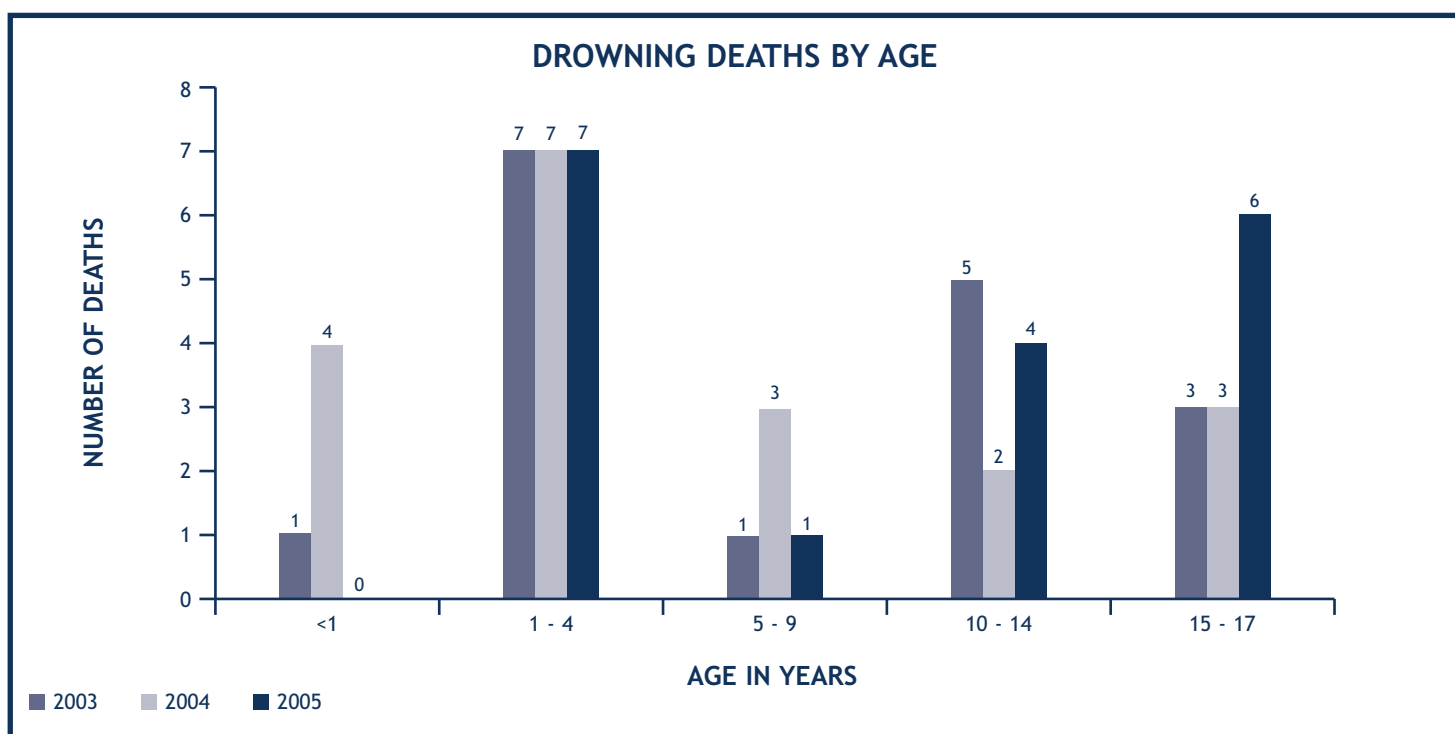
An eight-month-old infant was placed in a bathtub with about two inches of water. The mother left him playing with tub toys, while she went to check on another child. When she came back, the baby was face down in the water.

- **Young children require vigilant adult supervision when outdoors near bodies of water, such as pools, creeks and streams.**

A two-year-old child was playing in the water beside a creek, while other children were playing nearby. The mother was busy talking with other adults and she did not have a clear view of the child. When one of the other children reported that the two-year-old was missing, a frantic search began and the child was found in the water.

A ten-year-old was walking along the bank of a creek with two other children, whose father was watching them. The child slid off a steep bank and fell into the water. Several minutes passed before he was brought to the surface. Efforts to resuscitate him were not successful.

In the United States, drowning is the second leading cause of unintentional injury-related deaths among children, taking more than 2,000 young lives each year. In Missouri, drowning ranked fourth as a leading cause of injury death. Young children, age 4 and under, have the highest drowning death rate (*Safe Kids*). Of the **18** Missouri children who drowned in 2005, **7** (39%) were age 4 and under.

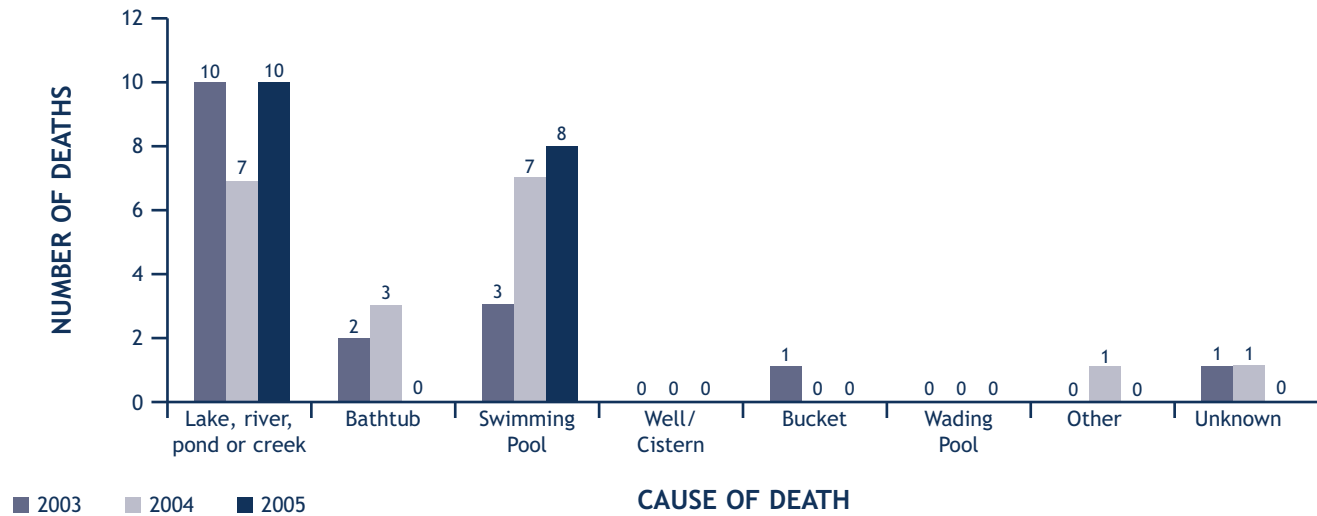


DROWNINGS BY SEX AND RACE							
SEX	2003	2004	2005	RACE	2003	2004	2005
FEMALE	4	10	4	WHITE	16	16	16
MALE	13	9	14	BLACK	1	3	2
	17	19	18		17	19	18

Drownings among infants under age 1, typically occur in residential bathtubs. Most drownings among children 1 through 4 years old, occur in residential swimming pools. However, children can drown in as little as one inch of water and, therefore, are at risk of drowning in wading pools, buckets, toilets and hot tubs. Childhood drownings can happen in a matter of seconds and typically occur when a child is left unattended, or during a brief lapse in supervision. Contrary to what many people believe, drowning usually occurs quickly and silently. The scenario that a drowning person will make lots of noise, while thrashing around in the water and resurface several times before actually drowning, is pervasive, but entirely false. (*Safe Kids*)

Older children are more likely to drown in open water sites such as creeks, lakes and rivers. Of the **18** Missouri children who drowned in 2005, **8** (44%) occurred in swimming pools, **10** (56%) occurred in open water sites.

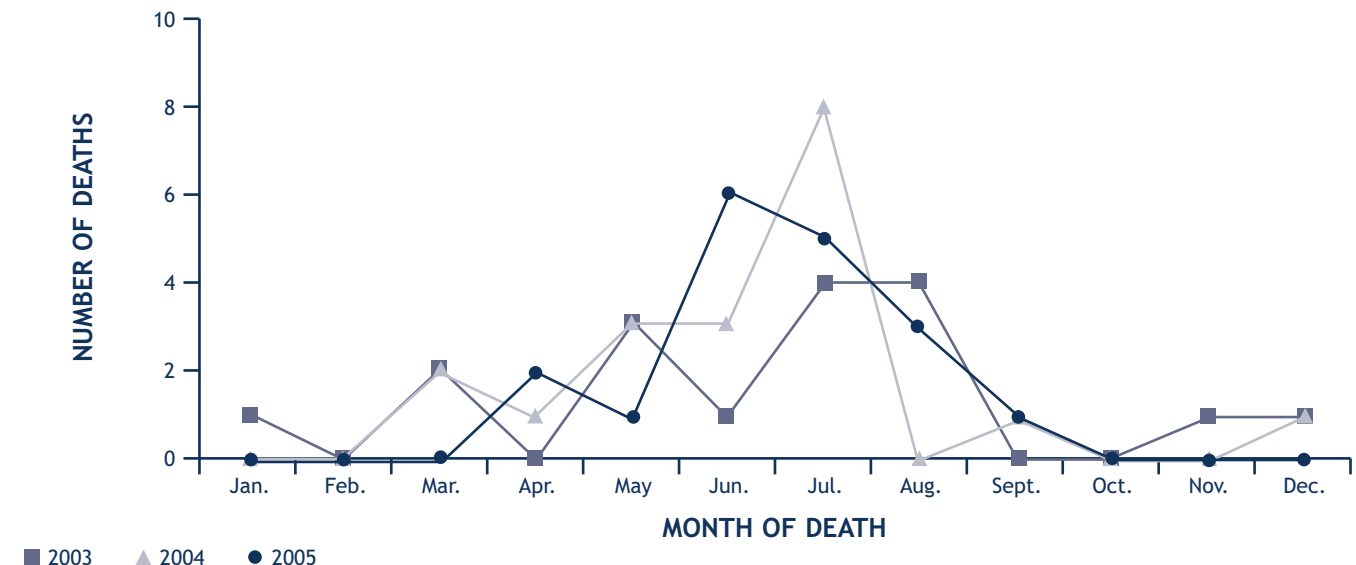
## LOCATION OF DROWNINGS



## DROWNING DEATHS AMONG CHILDREN

- Supervision of children in and around water is critical. Of the **18** drowning fatalities in 2005, in which supervision of the child victim was a consideration, panels found that **8** (44%) had entered the water unattended.
- Use of a personal flotation device is well established as an effective means to prevent drowning deaths. **None** of the Missouri children who drowned in 2005, were wearing a personal flotation device.
- The warm-weather months of June, July, August and September are peak months for drowning, coinciding with increased activity in swimming pools and open water sites.

## DROWNING DEATHS BY MONTH OF DEATH



## **PREVENTION RECOMMENDATIONS:**

### *For parents:*

- Never leave a child unsupervised in or around water in the home or outdoors, even for a moment.
- For families with residential swimming pools: Install four-sided pool fencing with self-closing and self-latching gates. The fence should be at least four feet tall and completely separate the pool from the house and play area of the yard.
- Ensure that children always wear U.S. Coast Guard-approved personal flotation devices near open water or when participating in water sports.
- Learn CPR.

### *For community leaders and policy makers:*

- Enact and enforce pool fencing ordinances.
- Enforce existing regulations regarding the use of personal flotation devices when boating.

### *For professionals:*

- Parents, as well as children, should receive water safety education. This should include discussion of water hazards to children (including buckets) and the importance of vigilant supervision.
- Facilitate CPR training for parents of small children.

### *For Child Fatality Review Panels:*

- Promote public education about drowning hazards to children and strategies to prevent drowning.

## **RESOURCES AND LINKS:**

National Safe Kids Campaign . . . . .	<a href="http://www.safekids.org">www.safekids.org</a>
National Center for Injury Prevention . . . . .	<a href="http://www.cdc.gov/ncipc">www.cdc.gov/ncipc</a>
Harborview Injury Prevention and Research Center . . . . .	<a href="http://depts.washington.edu/hiprc">http://depts.washington.edu/hiprc</a>
Consumer Product Safety Commission . . . . .	<a href="http://www.cpsc.org">www.cpsc.org</a>
Red Cross . . . . .	<a href="http://www.redcross.org">www.redcross.org</a>
The United States Lifesaving Association (USLA) . . . . .	<a href="http://www.usla.org">www.usla.org</a>

# UNINTENTIONAL FIREARM FATALITIES

In 2005, ten Missouri children died of unintentional firearm injuries.

## Representative Cases:

- Education should be offered in all communities about gun safety. Parents should monitor children who are handling firearms.

A sixteen-year-old was shot by a sibling, who was attempting to unload the weapon.

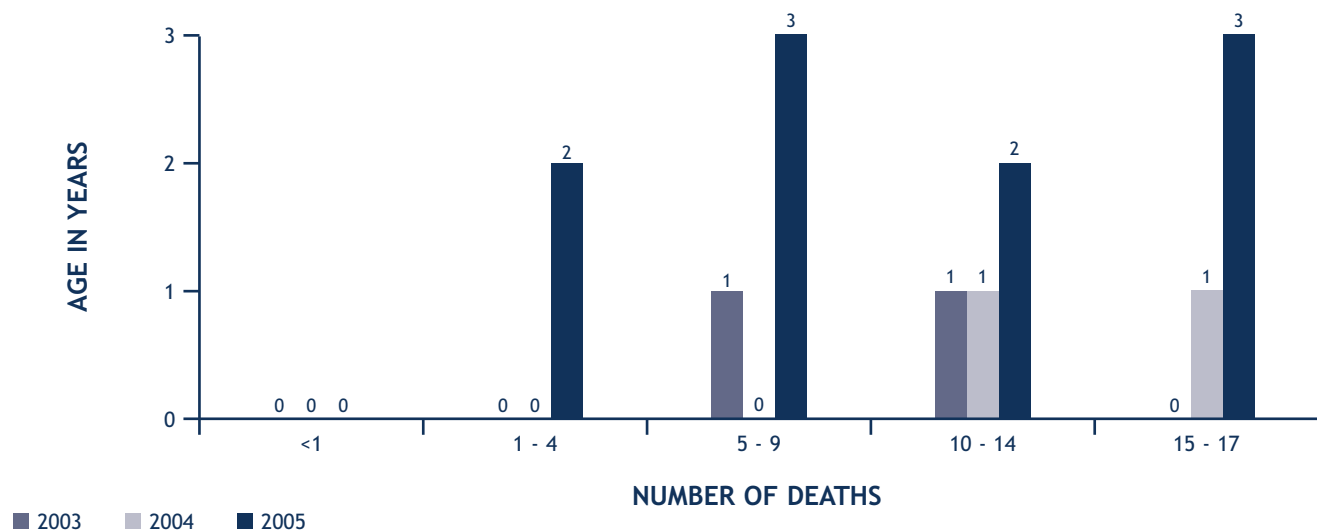
- Parents who own guns should always store firearms unloaded and locked up, out of children's reach. Use gun locks, load indicators, and other safety devices on all firearms.

A three-year-old and his one-year-old brother were playing unsupervised. The older child found his father's gun in a plastic case, which had been left on the floor. While playing with the gun, it discharged and the toddler was shot.

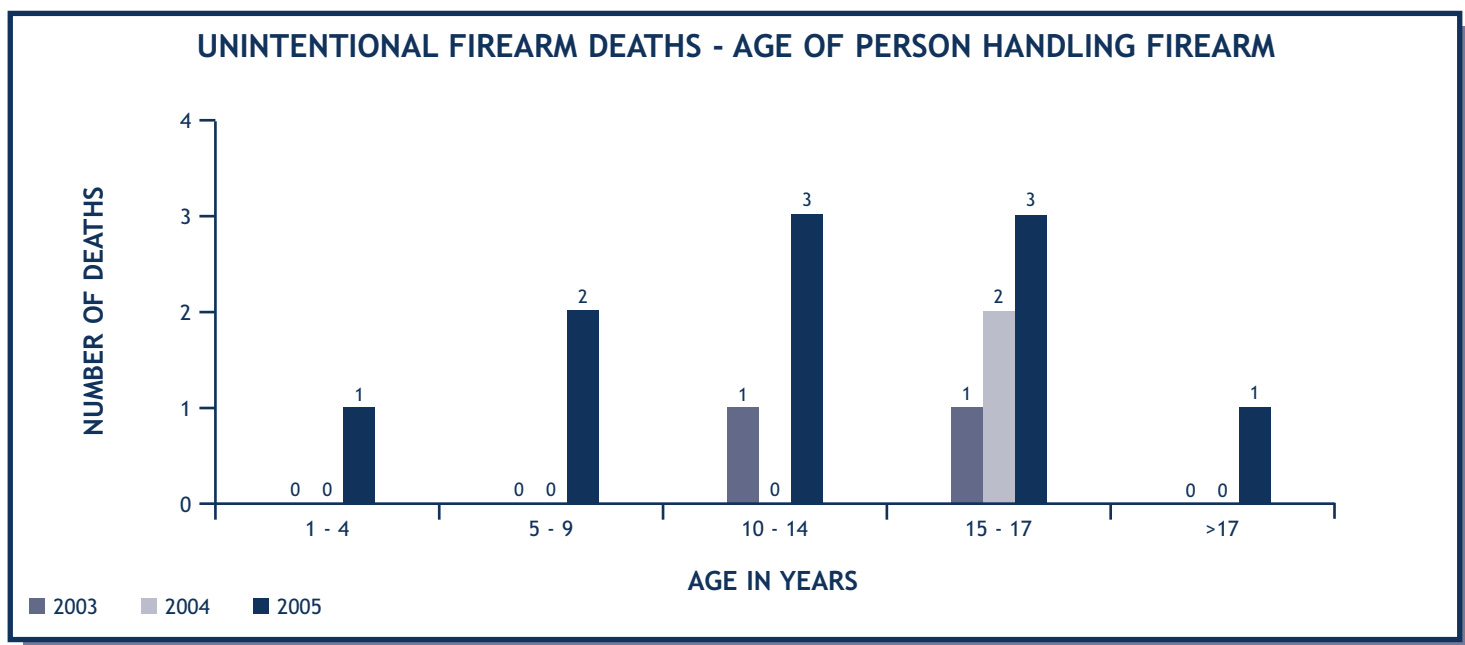
A six-year-old was playing with his father's gun, which was loaded. She was pretending to shoot her two-year-old brother and pulled the trigger. The gun discharged, shooting the two-year-old in the head and the six-year-old in the foot.

In the United States, about 500 children die each year from unintentional shootings and at least five times as many, are wounded. In 2005, **ten** Missouri children died of unintentional firearm injuries.

UNINTENTIONAL FIREARM FATALITIES BY AGE







Certain groups of children are at higher risk for unintentional firearm-related injuries. In the United States, male children are far more likely to be injured and die from unintentional shootings, than female children. Of those children age 14 and under who are killed by an unintentional shooting, 82% are male. In Missouri in 2005, **8** of the 10 child victims of unintentional shootings were male and **2** were female. Children living in the South and in rural areas have higher rates of unintentional firearm-related deaths, than other areas.

Nationally, more than 70% of unintentional shootings involve handguns. In 2005, **8** of the 10 unintentional firearm deaths among children involved handguns. The other two involved a rifle and a shotgun.

Forty percent of gun owners keep firearms in the home for protection and crime prevention. Guns in the home for protection are more likely to be handguns, found in a home with children, stored loaded and unlocked. Of the **10** unintentional firearm deaths reviewed by CFRP panels in 2005, **7** involved a gun that was owned by a family member and **one** gun was owned by the decedent. **Eight** of the 10 Missouri children who died as a result of unintentional firearm injury in 2005, were killed with a gun that was stored in a location accessible to children, or not locked and secured.

## UNINTENTIONAL FIREARM DEATHS AMONG CHILDREN

Unrealistic perceptions of children's capabilities and behavioral tendencies with regard to guns are common.

- Most unintentional childhood shooting deaths involve guns kept in the home, that have been left loaded and accessible to children, and occur when children play with loaded guns. **Six** of the 10 Missouri children who died as a result of unintentional firearm injury in 2005, were reported to be playing with the gun.
- Unintentional shootings among children most often occur, when children are unsupervised and out of school.

- Nearly two-thirds of parents with school-age children, who keep a gun in the home, believe that the firearm is safe from their children. However, one study found that when a gun was in the home, 75-80% of first and second graders knew where the gun was kept.
- Generally, before age 8, few children can reliably distinguish between real and toy guns, or fully understand the consequences of their actions.
- Children as young as age three are strong enough to pull the trigger of many of the handguns available in the U.S.

Declines in child firearm and BB-pellet gun-related injury rates during the 1990's, coincided with increased prevention efforts, including legislation and education, aimed at reducing unsupervised access to guns by children.

- It is estimated that two safety devices - gun locks and load indicators - could prevent more than 30% of all unintentional firearm deaths.
- To distinguish them from real guns, toy guns must conform to marking requirements under the U.S. Department of Commerce "Marking of Toy Look Alike and Imitation Firearms" regulation.
- Eighteen states have enacted child access prevention laws, which may hold adults criminally liable for failure to either store loaded firearms in a place inaccessible to children, or use safety devices to lock guns.
- State safe-storage laws intended to prevent child access to guns, have reduced unintentional firearm-related deaths among children ages 14 and under, by an average of 23 percent. (*Safe Kids*)

One possible strategy to decrease firearm injury and deaths to children, is educational programs. These can be directed at the children themselves, or at parents and adults, to store guns more safely in the home (or out of the home). The National Rifle Association's "Eddie Eagle" program is an example of the former type of educational intervention. Unfortunately, few of these educational interventions have been evaluated. (*National Injury Prevention and Research Center*)

## **PREVENTION RECOMMENDATIONS:**

### For Parents:

- Parents who own guns should always store firearms unloaded and locked up, with ammunition locked in a separate location, out of children's reach, use gun locks, load indicators and other safety devices on all firearms.
- All parents should teach children never to touch a gun and tell an adult, if they find a gun.

### For community leaders and policy makers:

- Enforce laws and ordinances that restrict access to and decrease availability of guns.
- Enact and enforce laws requiring new handguns be designed to minimize the likelihood of discharge by children.
- Enact laws outlining owner liability for harm to others, caused by firearms.

For professionals:

- Implement gun safety education. It is important to include public education about the hazards of firearms, as one component of an overall effort to reduce the incidence of firearm injuries and deaths.

For Child Fatality Review Panels:

- In all cases of firearm fatalities involving children, ensure that every effort is made to determine the source of the gun and consider the responsibility of the gun owner in the incident.

**RESOURCES AND LINKS:**

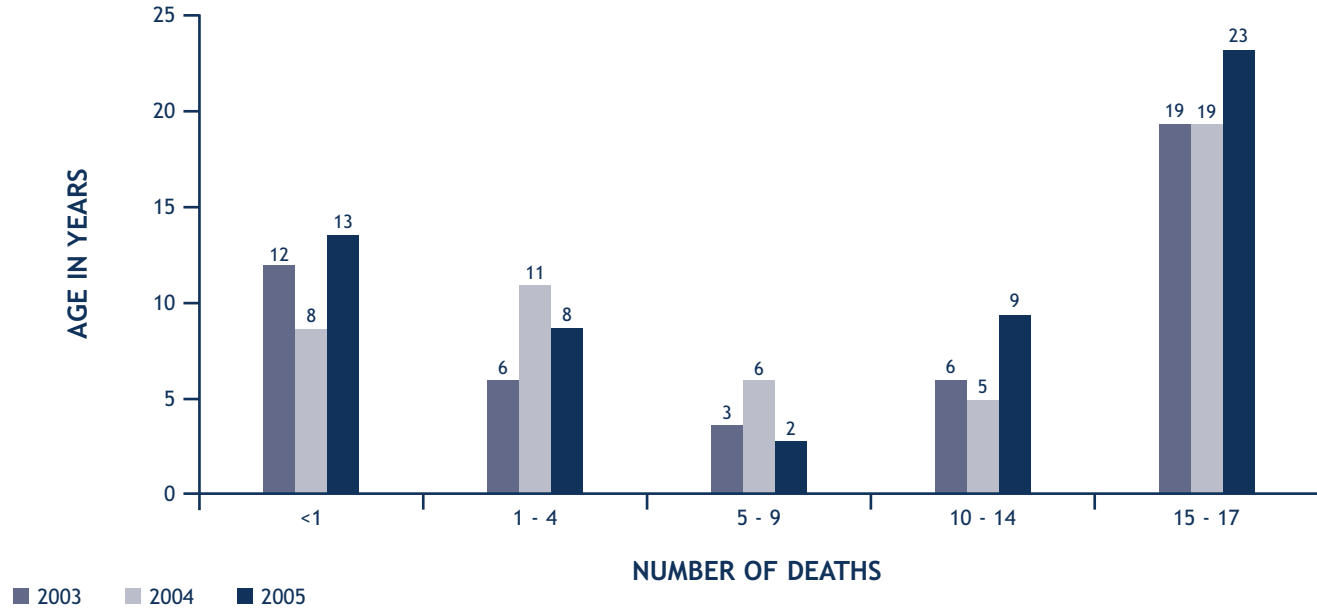
National Safe Kids Campaign . . . . . [www.safekids.org](http://www.safekids.org)  
 Harborview Injury Prevention and Research Center . . . . . <http://depts.washington.edu/hiprc>  
 National Rifle Association  
 “The Eddie Eagle GunSafe Program” . . . . . [www.nrahq.org/safety/eddie](http://www.nrahq.org/safety/eddie)  
 Missouri Department of Conservation Hunter Education Program . . . . . [www.mdc.mo.gov](http://www.mdc.mo.gov)  
 “Education” features education resources for teachers, youth groups and organizations, including an educational materials request form, as well as information on Hunter Education class locations, conservation and other outdoor skills education programs. The Hunter Education Program features the film, “The Last Shot,” which targets older children and teen audiences with an effective gun safety message.

## HOMICIDES

In 2005, homicide was listed as the death certificate manner of death for 55 Missouri children.

- 1. Fatal Child Abuse and Neglect: Child death resulting directly from inflicted physical injury and/or grossly negligent treatment by a parent or caretaker, regardless of motive or intent.** This includes, but is not limited to, children whose deaths were reported as *homicide* by death certificate. In 2005, a total of **78** Missouri children were identified by CFRP panels, as victims of Fatal Child Abuse and/or Neglect; of those, **22** Fatal Child Abuse-Inflicted Injury were reported by death certificate as Homicide.
- 2. Death of a child in which the perpetrator was not in charge of the child.** This most often includes youth homicides, such as gang-related or drug-related shootings and child abductions that culminate in murder. There were **30** such fatalities among Missouri children in 2005. Of those, CFRP panels identified **four** child deaths in which parental negligence was a contributing factor.
- 3. Deaths of children in which the perpetrator, not in charge of the child, was engaged in criminal or negligent behavior, and the child was not an intended victim.** Examples often involve firearms or motor vehicles and drugs or alcohol. In 2005, there were **three** such deaths of this type among Missouri children. Of those, CFRP panels identified **one** child death in which parental negligence

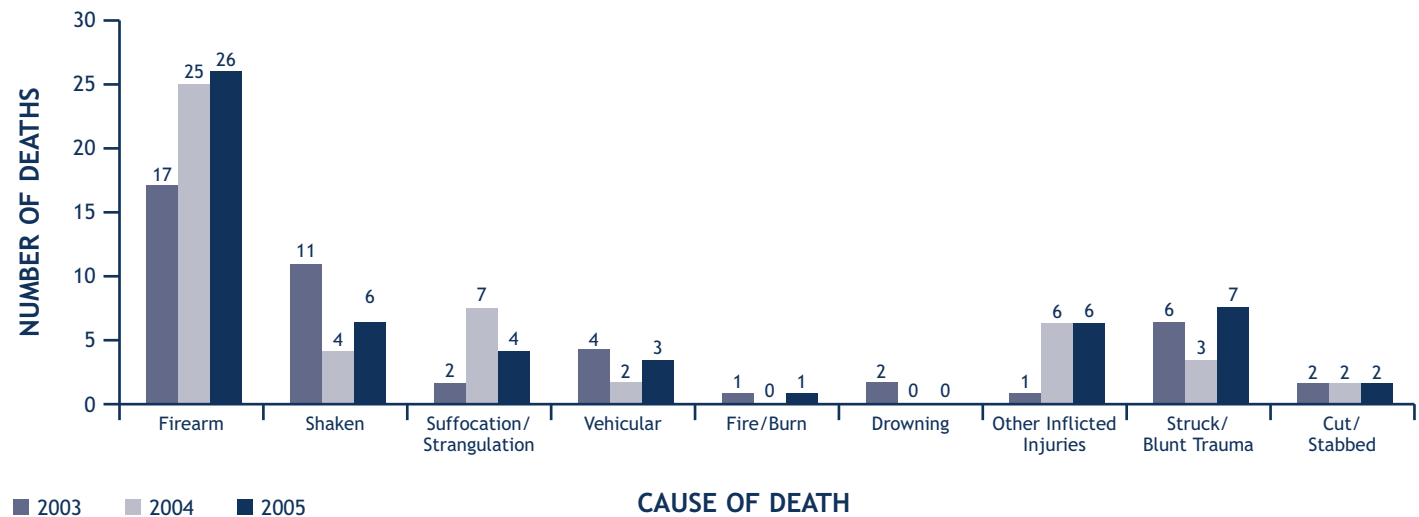
### HOMICIDES BY AGE



### HOMICIDES BY SEX AND RACE

SEX	2003	2004	2005	RACE	2003	2004	2005
FEMALE	13	19	17	WHITE	25	20	29
MALE	33	30	38	BLACK	21	29	26
	46	49	55		46	49	55

### HOMICIDES BY CAUSE



“In the little world in which children have their existence, whosoever brings them up, there is nothing so finely preserved and so finely felt as injustice.”  
 -Charles Dickens, from Great Expectations.

# FATAL CHILD ABUSE AND NEGLECT

In 2005, 78 Missouri children were victims of Fatal Child Abuse and Neglect. Of those, 27 were reported as homicide by death certificate.

## Representative Cases:

- **Young children are more likely to die from abuse and neglect.**

An infant with a history of asthma, was suffering from pneumonia. She was put to bed, wrapped in a blanket, in a very hot room that was the only non-air-conditioned area of the house. When she was found unresponsive, the parents drove her to the hospital, where she was pronounced dead.

A toddler was left in the care of his mother's boyfriend, while she was at work. While returning to the apartment with the child, the boyfriend kicked him in the stomach, when he was too slow in climbing the stairs. He died of blunt trauma to the abdomen.

- **Multidisciplinary teams should be developed, supported and trained on the local level to investigate serious offenses against children.**

An sixteen-week-old baby was lying in his father's arms, while the father slept in a recliner. The father claimed that when he awoke, the baby was limp and unresponsive. When autopsy revealed fresh and healing posterior rib fractures, the father confessed to squeezing the infant on multiple occasions, to stop him from crying. Cause of death was chest compression. Both parents had a child abuse and neglect history.

- **Parents and caretakers must be educated about the dangers of shaking and ways to cope with crying infants.**

The mother of a six-month-old became frustrated with the infant's crying. She placed her face down on an adult pillow, on a mattress on the floor, covered her with blankets, and left the room. The baby was found unresponsive an hour and a half later.

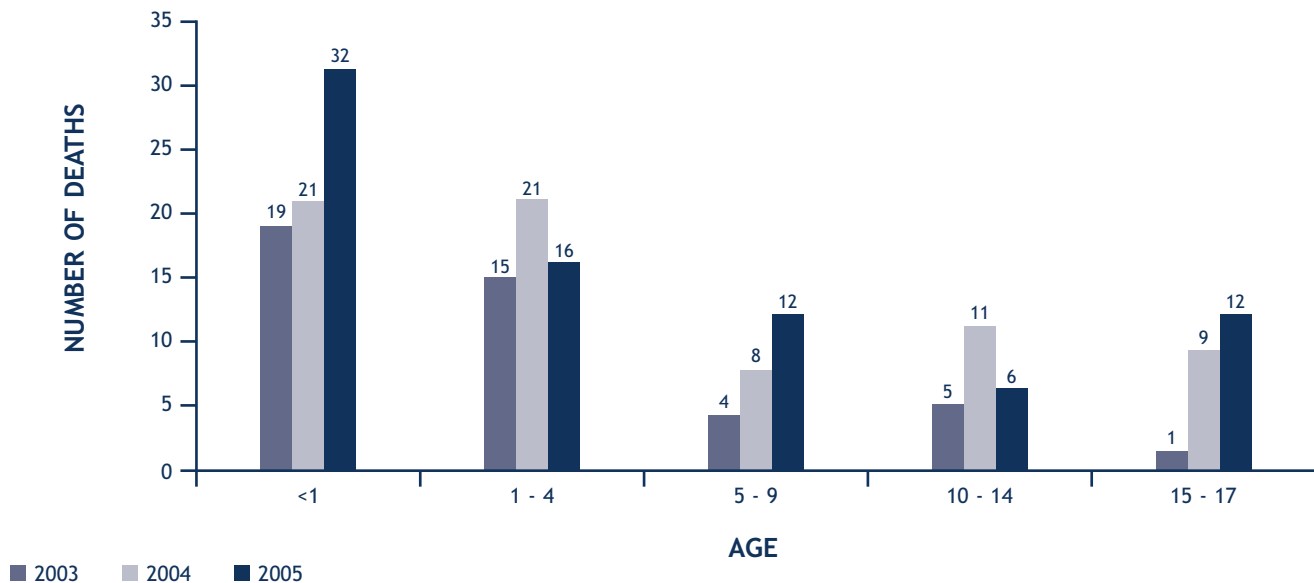
A two-year-old was crying unconsolably. The mother slapped her in the face, which resulted in bruising. When the child continued to cry, the mother forcibly held a pillow over the child's face, until she stopped breathing.

A four-month-old was in the care of his father, while the mother was at work. The father worked during the day and the mother worked nights. The father was trying to sleep when the baby began crying. He called the mother to tell her to come home. When she arrived, she found the baby unresponsive. The father later admitted that he had shaken the baby, to make him stop crying. He also admitted that this was not the first time he had shaken him.

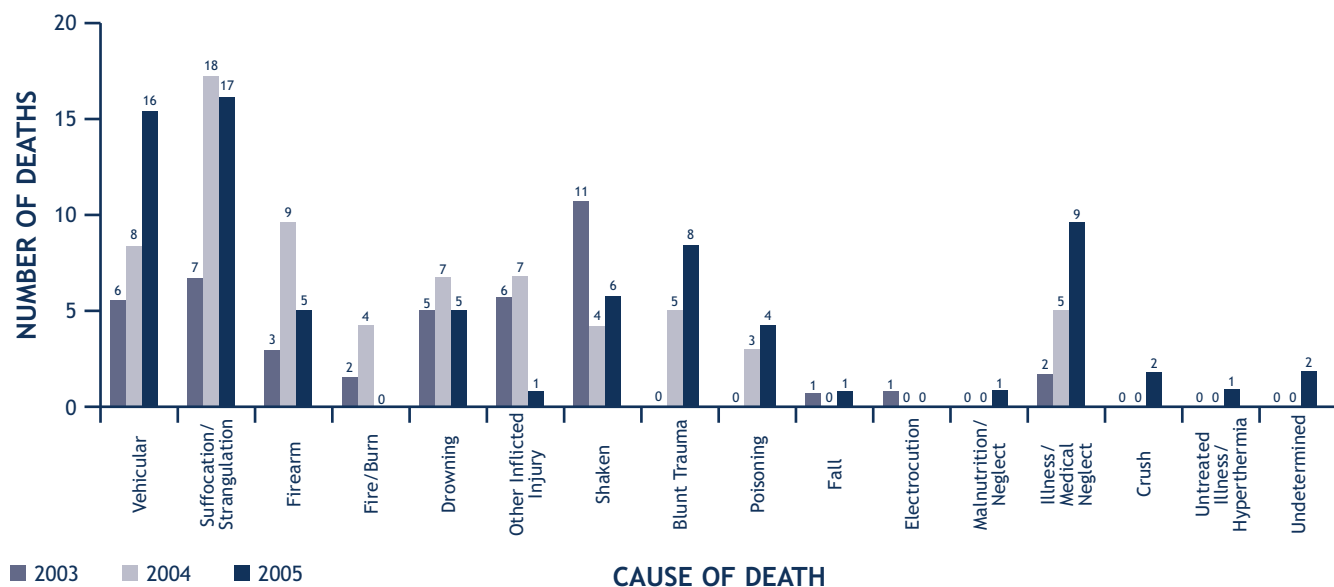
### CHILD ABUSE AND NEGLECT FATALITIES BY SEX AND RACE

SEX	2003	2004	2005	RACE	2003	2004	2005
FEMALE	16	32	35	WHITE	32	48	63
MALE	28	38	43	BLACK	12	22	15
	44	70	78		44	70	78

### CHILD ABUSE AND NEGLECT FATALITIES BY AGE



### CHILD ABUSE AND NEGLECT DEATHS BY CAUSE



Child fatalities are the most tragic consequence of child abuse and neglect. In the United States, approximately 1,200 children die of abuse or neglect each year, according to vital records (NCAN-DS). However, it is well documented that child abuse and neglect fatalities are under-reported and that, nationally, at least 2,000 children die each year at the hands of their parents or caretakers. Some estimates are as high as 3-5,000. (Ewigman et al., 1993; Herman-Giddens et al., 1999) There are a number of reasons for the discrepancies and some of the fundamental problems are highlighted in this section. The Centers for Disease Control has funded an effort to develop a standardized national surveillance system capable of accurately reported child abuse and neglect families. On a state level, properly organized and functioning child fatality review systems have improved the accuracy of child death reporting.

In Missouri, there are three entities within state government responsible for child fatality information: **Department of Health and Senior Services' Bureau of Vital Statistics, Department of Social Services, Children's Division and Child Fatality Review Program.** All three exchange and match child fatality data in order to ensure accuracy throughout the system. However, the Bureau of Vital Statistics, Children's Division and the Child Fatality Review Program serve very different functions and, therefore, different classifications and timing periods apply, when child fatality data is reported.

## VITAL STATISTICS AND DEATH CERTIFICATE INFORMATION

The death certificate is issued for two major purposes. One is to serve as legal documentation that a specific individual has died. In general, the death certificate serves as legal proof that death has occurred, but not as legal proof of the cause of death. The second major purpose of the death certificate is to provide information for mortality statistics that may be used to assess the nation's health, causes of morbidity and mortality, and developing priorities for funding and programs that involve public health and safety issues.

Death certificate information is widely recognized as inadequate as a single source for identification of child abuse and neglect deaths. Misidentification of deaths may occur, because of inadequate scene investigation or autopsy procedure, inadequate investigation by law enforcement or child protection, or misdiagnosis by a physician or coroner. Child abuse and neglect fatalities often mimic illness and accidents. Neglect deaths are particularly difficult to identify, because negligent treatment often results in illness and infection that can be attributed to natural causes.

## CHILDREN'S DIVISION: CHILD ABUSE/NEGLECT FATALITIES

The Missouri Department of Social Services, Children's Division is the hub of the child protection community. Children's Division provides a unique, multiple-response system for responding to each report of child abuse and neglect received by the Child Abuse/Neglect Hotline Unit (CANHU). Children's Division's responsibilities are limited to those reports that meet the legal definition of child abuse and neglect, stipulated in 210.110, RSMo, for children under the age of 18, from whom the perpetrator has care, custody and control.

Since August 2000, all child deaths are reported to the Children's Division Central Registry. Any child not dying from natural causes, while under medical care for an established natural disease, is brought to the attention of the division by the coroner or medical examiner. A fatality report is taken and,





when appropriate, the report is accepted for investigation of child abuse and neglect by the division. The Child Fatality Review Program is immediately notified of all fatality reports. The division is also responsible, if ordered by a judge, for protecting any other children in the household, until the investigation is complete and their safety can be assured.

After a report of child abuse or neglect has been made, investigations that return sufficient evidence supporting the report are classified as *probable cause child abuse and neglect*. When there is probable cause to believe that a child who has died was abused or neglected, or when this finding is court-adjudicated, that death is considered by the division to be a *probable cause child abuse and neglect fatality*. Thus, reports classified by the division as *probable cause child abuse and neglect fatalities* include deceased children whose deaths may or may not have been a direct result of the abuse or neglect. An example would be an unsupervised toddler who was run over in the driveway of her home. That death would be included as a pedestrian fatality in this CFRP Annual Report, with Inadequate Care as a contributing factor. In a case such as this, Children's Division would determine that there was *probable cause* to believe that this child was a victim of *neglect*, specifically, lack of supervision.

## THE MISSOURI CHILD FATALITY REVIEW PROGRAM: FATAL CHILD ABUSE AND NEGLECT

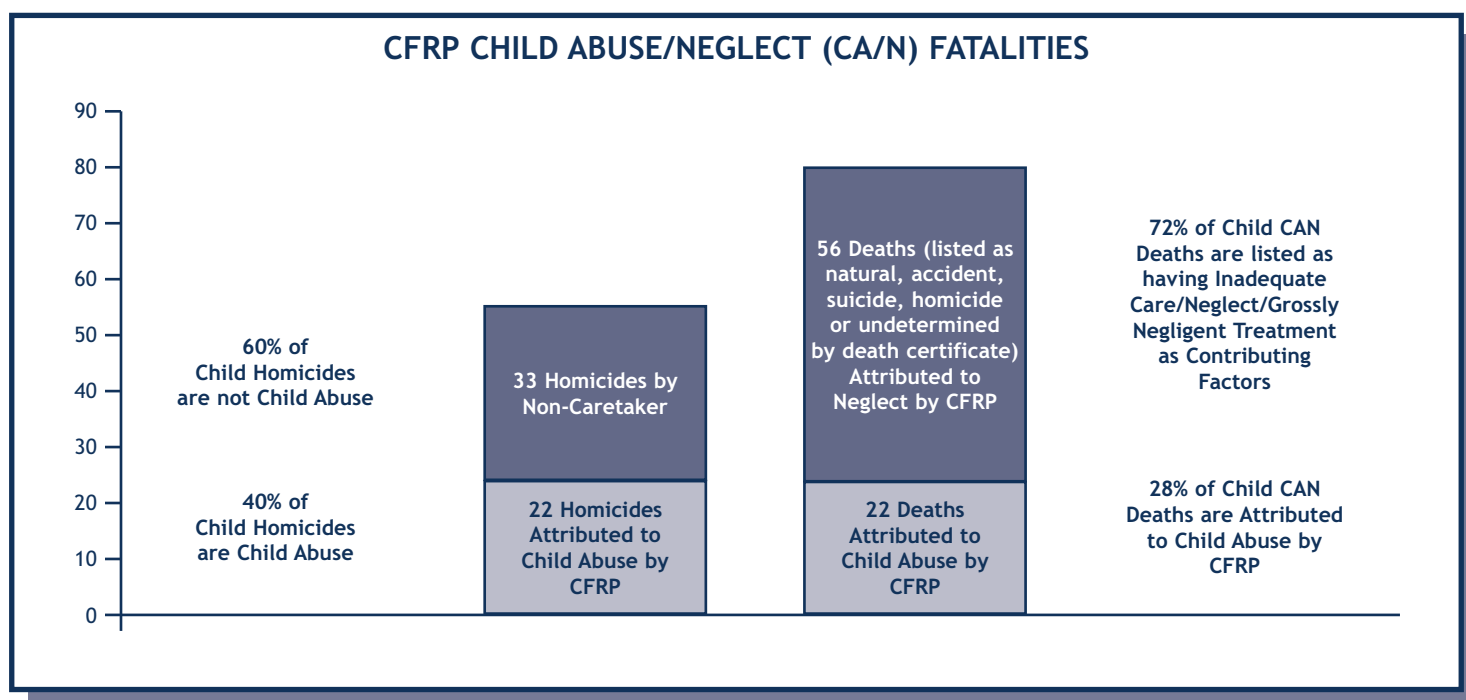
Child fatalities represent the extreme of all issues that have a negative impact on children. Despite an increasing awareness of severe violence against children, very little was known in the past about fatal child abuse and neglect. In the late-1980's, Missouri researchers discovered that many fatal child injury cases were inadequately investigated and that many children were dying from common household hazards with inadequate supervision. Many cases of fatal abuse and neglect went undetected, misclassified as natural deaths, accidents or suicides. The information necessary for a thorough investigation of a child death was distributed among agencies, which could not share records. In 1992, Missouri initiated a comprehensive, statewide child fatality review system. The CFRP review process has resulted in better investigations, more timely communication, improved training and technical assistance, and standardized data collection that allows us to understand much more about how our children die, the circumstances in which they die and who may be responsible.

Beginning in 1999, the Child Fatality Review Program Annual Reports refined the reporting and analysis of CFRP data in many ways, including an examination of data concerning "Fatal Child Abuse and Neglect", as defined by local panels. Those numbers represented a subset of child fatalities reported as *homicide* by death certificate. These changes allowed us to begin to understand much more about how Missouri children die, the circumstances in which they die and who may be responsible.

The Child Fatality Review Program defines *Fatal Child Abuse and Neglect* as child deaths resulting directly from inflicted physical injury and/or grossly negligent treatment by a parent or caretaker, regardless of motive or intent. This number includes, but is no longer limited to, children whose deaths were reported as homicide by death certificate; their death certificate manners of death may include natural, accident or undetermined. See Appendices 6 and 7 for additional information.

**"Murder is no less a crime because a child, rather than an adult, is the victim."**

**-Unknown**



## FATAL CHILD ABUSE: INFLICTED INJURY

In 2005, 22 Missouri children died from inflicted injury at the hands of a parent or caretaker.

In the United States, it is estimated that 2,000 children are murdered each year. Homicide at the hands of a parent or caretaker is the leading cause of injury-related death in infants under one year of age. Infants and young children under the age of four years are at greatest risk of severe injury and death, due to physical abuse. In 2005, **20** of the **22** (91%) who died from inflicted injuries at the hands of a parent or caretaker, were four years of age or younger. Of those, **13** (65%), were infants under the age of one year.

In 2005, **seven** Missouri children died of blunt trauma injuries to the abdomen or head, when they were struck, punched, kicked or thrown. Infants and young children are especially vulnerable because vital organs are in close proximity to each other; the ribs are small and cannot protect vital internal organs. Blunt trauma to the chest and abdomen can result in massive internal injuries and bleeding.

In the United States, Shaken Baby Syndrome is the second most common cause of death due to trauma in children and the cause of more than 95% of serious head injuries in infants less than one year of age. In 2005, **six** Missouri children were victims of fatal abusive head trauma, commonly known as Shaken Baby Syndrome (SBS).

Another common type of physical abuse among young children, but often more difficult to detect, is suffocation/strangulation. These injuries occur when hands or materials are used to block or cover external airways (suffocation) or used to exert pressure on the neck and interfere with breathing (strangulation), or pressure is exerted on the chest in order to interfere with breathing. In 2005, **five** Missouri children died of suffocation/strangulation injuries at the hands of a parent or caretaker.

## FATAL ABUSE: INFLICTED INJURY

FATAL ABUSE INFLICTED INJURIES BY AGE	
<1 year	13
1-4 years	7
5-9 years	1
10-14 years	1
15-17 years	0

FATAL ABUSE INFLICTED INJURIES BY SEX	
Females	8
Males	14

FATAL ABUSE INFLICTED INJURIES BY RACE	
White	17
Black	5

FATAL ABUSE INFLICTED INJURIES BY CAUSE			
Shaken Baby Syndrome	6	Other - Poisoning	1
Blunt Trauma	7	Malnutrition/Neglect	2
Suffocation/Strangulation	5	Other Inflicted Injuries	1

## SHAKEN BABY SYNDROME

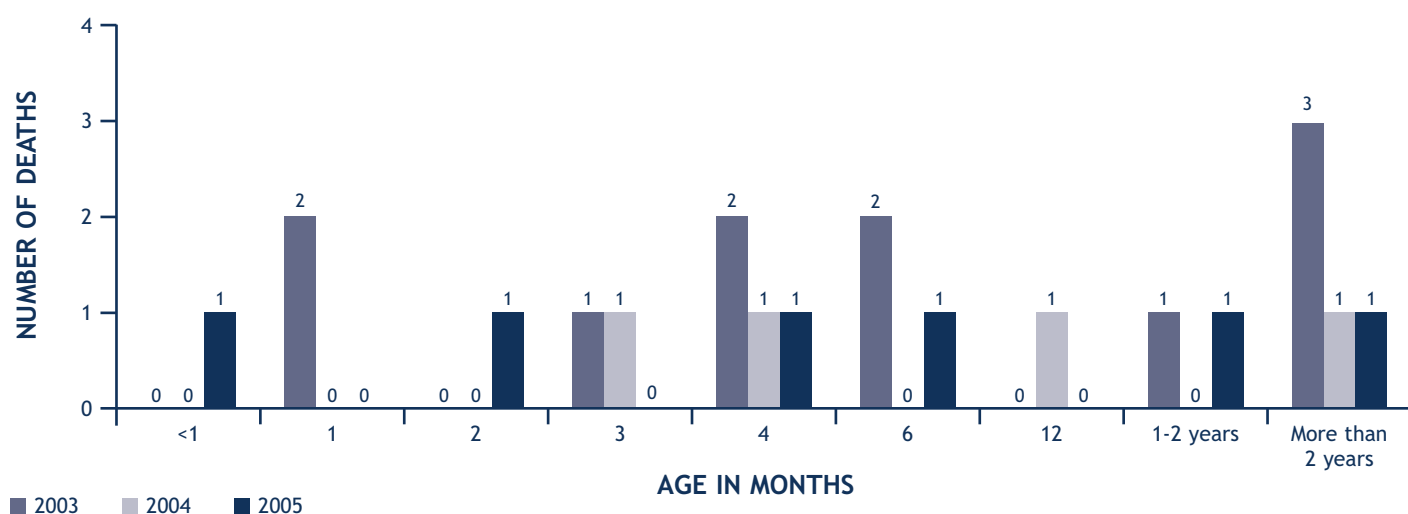
Of the **22** Missouri children who died from inflicted injury at the hands of a parent or caretaker in 2005, **six** (27%) were victims of abusive head trauma (or inflicted traumatic brain injury), commonly known as Shaken Baby Syndrome. Shaken Baby Syndrome (SBS) is the second most common cause of death due to trauma in children and the cause of >95% of serious head injuries in children less than one year of age.

Shaken Baby Syndrome involves the violent shaking or shaking and impacting of the head of an infant or young child, usually under the age of four years. Signs and symptoms range from minor (irritability, lethargy, tremors, vomiting) to major (seizures, coma, stupor, death). These neurological changes are due to destruction of brain cells, and swelling of the brain. Extensive retinal hemorrhages in one or both eyes are found in the vast majority of cases. Fractures of long bones and/or ribs may also be seen in some cases. (*National Center on Shaken Baby Syndrome*)

Shaken Baby Syndrome is so lethal that approximately 30% of victims require hospitalization and 20% of victims die in the first few days after injury. Approximately 50% of survivors suffer permanent neurologic disabilities ranging from mild (learning disorders, behavioral changes) to moderate and severe, such as profound mental and developmental retardation, paralysis, blindness, inability to eat or exist in permanent vegetative state. Many survivors initially thought to be normal have subsequent learning disabilities or other psychomotor delays that are not diagnosed until they reach school age.

The vast majority of SBS victims are indeed, “babies” or infants, less than one year of age, but victims can range in age from <1 month to eight years; the median age is 4-6 months. Infants are particularly vulnerable to shaking injuries, because of their unique physical and behavioral characteristics. Infants’ heads are large and heavy in proportion to their total body weight and their neck muscles are too weak to support such a disproportionately large head. Because an infant’s brain is immature, it is more easily injured. When an infant or young child is violently shaken, the head rotates wildly on the axis of the neck, resulting in rotation of the brain within the skull.

## SHAKEN BABY SYNDROME BY AGE



## SHAKEN BABY SYNDROME DEATHS BY SEX AND RACE

SEX	2003	2004	2005	RACE	2003	2004	2005
FEMALE	1	3	1	WHITE	9	2	5
MALE	10	1	5	BLACK	2	2	1
	11	4	6		11	4	6

Young parents, unstable family conditions, low socioeconomic status and disability or prematurity of the child make an infant particularly vulnerable. The triggering event for the shaking is almost always the baby's uncontrollable crying and loss of control by the caregiver. Crying peaks between six weeks and four months. Infant crying was known to be the apparent triggering event in **four** of the six SBS abuse fatalities among Missouri children in 2005.

Research has established that 60-70% of perpetrators of SBS are male. Birth fathers account for the majority, followed by the mother's boyfriend, female babysitters, and mother. In 2005, perpetrators of SBS abuse fatalities included **three** birth fathers, **one** mother's boyfriend, **one** babysitter and **one** unknown.

**"I shook her and her eyes half closed and they never moved."**

## FATAL CHILD NEGLECT: INADEQUATE CARE AND GROSSLY NEGLIGENT TREATMENT

The majority of unintentional fatalities and serious injuries among young children are the result of a temporary lack of supervision or inattention at a critical moment. This is often the case when infants and toddlers drown in bathtubs and swimming pools, or young children dart in front of moving vehicles. Parent and other caretakers often underestimate the degree of supervision required by young children. This is complicated by the mistaken idea that young children have some sort of innate fear of dangerous situations.

Negligent treatment of a child is an act of omission, which is often fatal when due to grossly inadequate physical protection, withholding nutrition or health care necessary to preserve life. Child deaths resulting from grossly negligent treatment are frequently difficult to identify, because neglect often results in illnesses and infections that can be attributed to natural causes, or exposure to hostile environments or circumstances that result in fatal “accidents.”

Definitions of negligent treatment vary depending on whether one takes a legal, medical, psychological, social service or lay perspective. There are broad, widely recognized categories of neglect that include: *physical neglect*, *emotional neglect*, *medical neglect*, *neglect of mental health*, and *educational neglect*. Within those definitions, there are subsets, as well as variations in severity that often include *severe* or “*nearly-fatal*” and *fatal*. Negligent treatment may or may not be intentional; however, the end result for the child is the same whether the parent is willingly neglectful (e.g., out of hostility) or neglectful due to factors such as ignorance, depression or overwhelming stress and inadequate support.

Grossly negligent treatment by a parent or caretaker generally involves failure to protect from harm and withholding or otherwise failing to provide food, shelter, or medical care necessary to meet the child’s basic needs. This level of negligence is egregious and surpasses momentary inattention or a temporary condition; it is often part of a pattern of negligent treatment. Child deaths often result when a parent or caretaker fails to adequately supervise the child, usually for extended periods of time.

In some cases, “failure to protect from harm” or failure to meet basic needs, involves exposure to a hostile environment or a hazardous situation with potential for serious injury or death. An example would be a three-year-old who was riding unrestrained, while his intoxicated parents were “playing chicken” with another vehicle. The child was ejected in the crash and died instantly. Another example is a toddler, put outside to play alone, who wandered out of the yard and drowned in a pond.

Medical neglect, as a form of grossly negligent treatment, refers to failure to provide prescribed medical treatment or emergency medical care for a known illness or injury with potential for a serious or fatal outcome. Examples include untreated diabetes or asthma.

As part of the review process, CFRP panels are asked to consider and designate all child fatalities in which Inadequate Care and/or Grossly Negligent Treatment contributed to the death of the child. In 2005, CFRP panels found Grossly Negligent Treatment had contributed to the deaths of **56** Missouri children; of those **five** were designated as Homicide by death certificate. For data purpose, all 56 deaths are included in the appropriate data section, Illness/Natural Cause, Unintentional Injury, Homicide or Suicide.

Total Child Deaths	Cause of Death	*Circumstances of Gross Negligent Treatment that Contributed to the Death						Examples
		Lack of Supervision	Malnutrition/Starvation	Medical Neglect	Exposure to Hostile Environment or Hazardous Situation	Unrestrained Children	Other	
8	Illness/ Natural Cause	1	1	5	3	0	3	Two newborn infant deaths resulted from complications of prematurity due to maternal substance abuse. Four child deaths resulted from withholding medical care for known or apparent illness or condition, including seizure; one of those children was also suffering from malnutrition at the time of death.
16	Vehicular	3	0	0	1	4	8	Four children, age 4 and under, riding unrestrained. Two children in separate incidents were riding on farm tractors, when they were thrown off or fell off. In two cases, very young children were left unattended near busy roads and struck by passing vehicles. One young child died when he was thrown from an ATV and crushed by the vehicle. Four young children died in two separate crashes caused by careless and wreckless driving, speeding, or intoxication of the adult driver.
12	Infant Suffocation	4	0	0	2	0	5	Seven infants died while bedsharing with adults. Two were overlayed by adults; one was exposed to soft bedding and foam mattress; in three cases, adults were intoxicated and in one case adults had been using meth. Four infants suffered positional asphyxia when left unattended for long periods of time in swings, infant carriers and bouncy seats. One infant slipped from a mother's bed into a head-down position in a diaper bag.
3	Poisoning	1	0	0	2	0	1	Two young children died of overdoses of adult prescription medications, including Fentanyl and Methadone, left in reach in containers that were accessible and not child-proof.
5	Firearm	2	0	0	4	0	2	Two children were accidentally shot by their siblings, who were playing with guns, left unlocked and accessible. One child was murdered by her former step-father, who then killed himself. A five-year-old apparently discovered a handgun and shot himself accidentally. Another young child was taken by her father to some type of drug transaction, which resulted in an altercation, during which the child was shot in the head.
5	Drowning	4	0	0	0	0	1	All seven drownings in young children age four and under involved at least a momentary lack of supervision. However, five of those were found to involve grossly negligent treatment, because they were left unattended in and around open water or swimming pools and drowned when adults left the area.
7	Other	0	0	2	2	0	4	There were 7 other child deaths due to various causes, designated by CFRP panels as grossly negligent treatment. One child received no medical care following a head injury, despite obvious signs of distress and diminishing consciousness, until she died. Another young child died in a daycare setting, when an unsecured room divider fell on him. Another child was exposed to a hazardous situation, when he became entangled in a power driven post-hole digger.
Total		15	1	7	14	4	24	

\*In some cases, more than one neglect category was applied to a single child death.



## INVESTIGATION AND PROSECUTION OF PHYSICAL CHILD ABUSE AND HOMICIDE

Most serious child abuse occurs in the privacy of the home, and seldom in the view of family or other witnesses. If evidence exists, it is often concealed or destroyed. Perpetrators rarely fit the image of a criminal, and most jurors and judges find it hard to accept that any parent or caretaker would intentionally harm a child. There may be no outward signs of trauma, as in most cases of abusive head trauma (Shaken Baby Syndrome). Cases of physical child abuse and homicide are complex and technical; proof hinges on the expertise with which the investigation is conducted and the clarity with which details of the medical evidence are presented to the jury. The legal and medical issues are often daunting, but there are resources designed to assist criminal investigators and prosecutors in identifying perpetrators and holding them accountable.

The State Technical Assistance Team (STAT), a commissioned law enforcement unit with the Department of Social Services, *is available 24 hours a day to respond to requests for assistance in the complex and highly technical field of child abuse, neglect and exploitation. Besides managing the Child Fatality Review Program, STAT also provides hands-on assistance, training, and expertise.*

1-800-487-1626

[www.dss.mo.gov/stat](http://www.dss.mo.gov/stat)

National Center for the Prosecution of Child Abuse, a program of the American Prosecutors' Research Institute APRI . . . . . [www.ndaa.org/apri/programs/ncpca/ncpca\\_home.html](http://www.ndaa.org/apri/programs/ncpca/ncpca_home.html)  
*Provides training and technical assistance. A clearinghouse on child abuse case, law, statutory initiatives, court reforms, information on expert witnesses, and trial strategies and research.*

National Center on Shaken Baby Syndrome . . . . . [www.dontshake.com](http://www.dontshake.com)  
*Provides technical assistance, research, expertise to investigation professionals, including scene investigation and suspected incidents, legal professionals, including visual presentation of medical evidence, and medical professionals, including recognizing abusive head trauma.*

Missouri Attorney General's Office. . . . . [www.ago.mo.gov](http://www.ago.mo.gov)  
*Special prosecutions and assistance, when requested by the local prosecutor.*

**"Child Abuse casts a shadow the length of a lifetime."**

## SOMETHING WE CAN DO: PREVENTING SHAKEN BABY SYNDROME



The majority of fatal inflicted injury deaths among children involve abusive head trauma, commonly known as Shaken Baby Syndrome (SBS). Research has demonstrated that prevention programs targeting all new parents and caregivers with education about the dangers of shaking and ways to cope with crying infants, results in a measurable reduction in the number of serious and fatal injuries.

Children's Trust Fund, Missouri's Foundation for Child Abuse Prevention, provides SBS Prevention materials, including brochures and "Preventing Shaken Baby Syndrome" videotapes for parent and for child care providers.

For additional information, or to order education materials, contact CTF at 573-751-5147 or visit the website at [www.ctfkids.org](http://www.ctfkids.org).



## **PREVENTION RECOMMENDATIONS:**

### For parents:

- Report child abuse and neglect.
- Seek crisis help through the Parent Helpline (800-367-2543) or ParentLink (800-552-8522).

### For community leaders and policy makers:

- Support and fund home-visitation child abuse prevention programs that assist parents.
- Enact and enforce laws that punish those who harm children.

### For professionals:

- Support and facilitate public education programs that target male caretakers and child care provider.
- Expand training on recognition and reporting of child abuse and neglect.
- Support development and training for multidisciplinary teams to investigate child abuse.

### For Child Fatality Review Panels:

- The role of CFRP panel is critical in identifying fatal child abuse, protecting surviving children, and ensuring that the family receives appropriate services. CFRP panels provide important data that enhances our ability to identify those children who are most likely to be abused and intervene before they are harmed.

## **RESOURCES AND LINKS:**

The National Center on Shaken Baby Syndrome . . . . . [www.dontshake.com](http://www.dontshake.com)  
 U.S. Department of Justice  
   Office of Juvenile Justice and Delinquency Prevention. . . . . [www.ojjdp.ncjrs.org](http://www.ojjdp.ncjrs.org)  
 ChildAbuse.com . . . . . [www.childabuse.com](http://www.childabuse.com)  
 Missouri Department of Social Services, Children's Division . . . . . [www.dss.mo.gov/cd](http://www.dss.mo.gov/cd)  
 Missouri Child Abuse Hotline. . . . . 1-800-392-3738  
 National Center for Missing and Exploited Children . . . . . [www.missingkids.com](http://www.missingkids.com)  
 Missouri Office of Child Advocate for Children's Protection and Services . . . . . [www.oca.mo.gov](http://www.oca.mo.gov)

## OTHER HOMICIDES

Of the 55 child homicides in Missouri in 2005, 33 involved perpetrators who were not in charge of the child; of those, 26 (79%) involved firearms.

### Representative Cases:

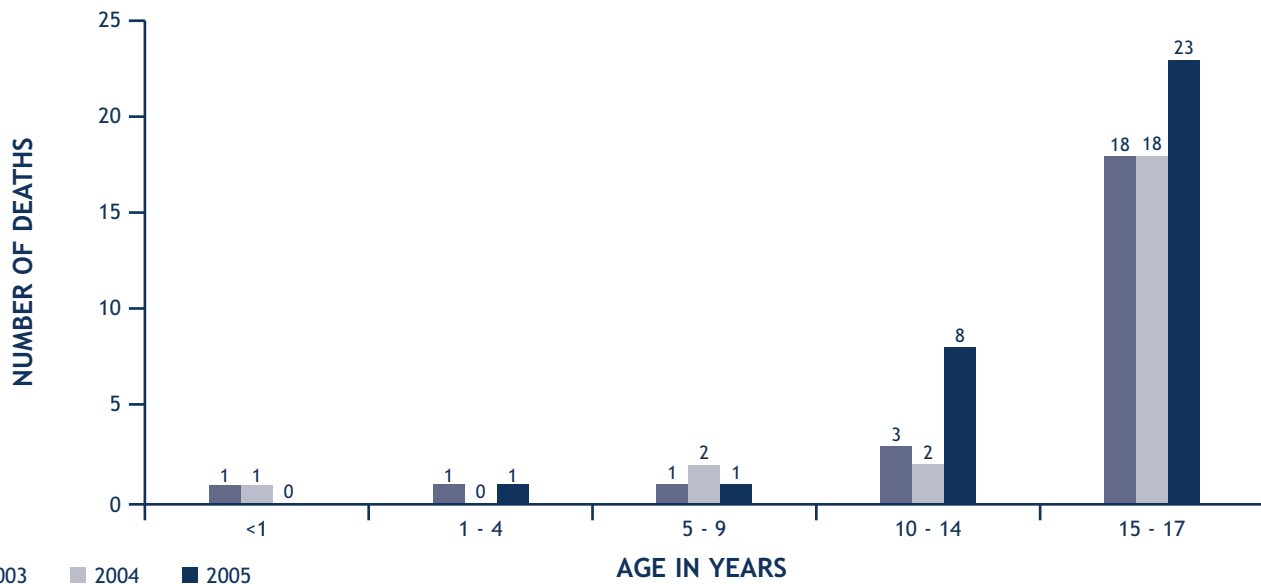
- The increased availability of guns and drugs contributes to violence.

A 16-year-old male, formerly in DYS custody because of delinquent behavior, became involved in a gang fight and was shot.

A 16-year-old male was shot while driving a car, apparently in revenge for a shooting that had occurred two weeks earlier.

A 14-year-old male was standing with a group of older teens and became an unintended victim, when an 18-year-old member of a rival gang began shooting.

OTHER HOMICIDE DEATHS BY AGE



OTHER HOMICIDE FATALITIES BY SEX AND RACE

SEX	2003	2004	2005	RACE	2003	2004	2005
FEMALE	4	6	10	WHITE	9	7	12
MALE	20	17	23	BLACK	15	16	21
	24	23	33		24	23	33

In 2005, **33** Missouri children were murdered by non-caretakers. Of those, **16** were youth homicides, child deaths in which the perpetrator was another child. Most youth homicides involve juvenile crime and violence, or abductions by adults or other adolescents, that culminated in murder.

Of the **33** Missouri children murdered by non-caretakers, **three** involved a perpetrator who was not in charge of the child, was engaged in criminal or negligent behavior, and the child was not an intended victim: (1) The murder of a mother by arson, also resulted in the death of her infant, who was sleeping with her. (2) A father took his nine-year-old son with him to buy drugs; when a fight erupted, and the boy was shot. (3) A 14-year-old male, standing with a group of older teens, became an unintended victim when a member of a rival gang began shooting.

## YOUTH HOMICIDE:

The most common mechanism of juvenile homicide is firearms. **Twenty-six** Missouri children died of intentional firearm injuries in 2005. Youth homicides are a serious problem in large urban areas, especially among black males. The majority of gun homicides among Missouri adolescents has risen sharply in the last three years, particularly when drug and gang activity is a factor.

OTHER HOMICIDES BY MECHANISM	
Firearm	10
Fire/Burn	1
Other Inflicted Injury	3
Vehicular	3
YOUTH HOMICIDES BY MECHANISM	
Firearm	16

Nationally, the rate of juvenile arrest for violent crime has risen sharply since the mid-1980's, and juvenile arrests for murder, robbery, motor vehicle theft and weapons violations far surpassed the growth in adult arrests, for these crimes. The growth in juvenile homicides has been particularly disturbing. The rapid rise of gun homicides of youth, coincided with the growth of crack cocaine markets in the inner city. The increased availability of guns to youth has been matched by an increased willingness to use violence to achieve one's goals. Violent confrontations are common in adolescence. If both parties are armed, the one who acts first usually gains a decided advantage. The realization that many youth on the street are carrying a weapon, increases the potential for an immediate and exaggerated response to real or perceived threats. Young males commit the majority of juvenile crime and violence. With the exception of rape and domestic violence, males are also more likely to be victims of violence than females. By age 17, the risk of homicide among males is five times that of females. (*Harborview Injury Prevention and Research Center*)

Research on youth violence has increased our understanding of factors that make some populations more vulnerable to victimization and perpetration. Many risk factors are the same, in part, because of the overlap among victims and perpetrators of violence. Risk factors are not direct causes of youth violence; instead, risk factors contribute to youth violence by increasing the likelihood that a young person will become violent. For example, in Missouri in 2005, 19% of high school participants in the Youth Risk Behavior Survey indicated that they had carried a weapon during the past month and 30% had been in a physical fight during the previous year. These behaviors are known to contribute to youth violence and homicide.

Research associates the following risk factors with perpetration of youth violence:

### Individual Risk Factors

- History of violent victimization or involvement

- Attention deficits, hyperactivity, or learning disorder
- History of early aggressive behavior
- Involvement with drugs, alcohol, or tobacco
- Low IQ
- Poor behavioral control
- Deficits in social cognitive or information-processing abilities
- High emotional distress
- History of treatment for emotional problems
- Antisocial beliefs and attitudes
- Exposure to violence and conflict in the family

#### **Family Risk Factors**

- Authoritarian childrearing attitudes
- Harsh, lax, or inconsistent disciplinary practices
- Low parental involvement
- Low emotional attachment to parents or caregivers
- Low parental education and income
- Parental substance abuse or criminality
- Poor family functioning
- Poor monitoring and supervision of children

#### **Peer/School Risk Factors**

- Association with delinquent peers
- Involvement in gangs
- Social rejection by peers
- Lack of involvement in conventional activities
- Poor academic performance
- Low commitment to school and school failure

#### **Community Risk Factors**

- Diminished economic opportunities
- High concentrations of poor residents
- High level of transiency
- High level of family disruption
- Low levels of community participation
- Socially disorganized neighborhoods

Protective factors buffer young people from risks of becoming violent. These factors exist at various levels. Protective factors have not been studied as extensively or rigorously as risk factors and most research is preliminary.

#### **Individual Protective Factors**

- Intolerant attitude toward deviance
- High IQ or high grade point average
- Positive social orientation
- Religiosity

#### **Family Protective Factors**

- Connectedness to family or adults outside of the family
- Ability to discuss problems with parents
- Perceived parental expectations about school performance are high
- Frequent shared activities with parents

- Consistent presence of parent during at least one of the following: when awakening, when arriving home from school, at evening mealtime, and when going to bed
- Involvement in social activities

#### **Peer/School Protective Factors**

- Commitment to school
  - Involvement in school activities
- (National Center for Injury Prevention and Control)*

## **VIOLENCE PREVENTION RECOMMENDATIONS:**

### For parents:

- Provide supervision, support and constructive activity for children and adolescents in your household.
- Access family therapy and parenting assistance, as necessary, for help with anger management skills, self-esteem and school problems.

### For community leaders and policy makers:

- Support the implementation of violence prevention initiatives.
- Encourage programs that provide support, education and activities for youth.
- Support legislation that restricts access to guns by children and adolescents.

### For professionals:

- Support and implement crisis interventions and conflict resolution programs within the schools.

### For Child Fatality Review Panels:

- Ensure that support for victims and survivors of youth violence is available.
- Support proactive approaches to crime control, especially those programs that include efforts to confiscate illegally carried firearms.

## **RESOURCES AND LINKS:**

National Center for Injury Prevention and Control . . . . .	<a href="http://www.cdc.gov/ncipc">www.cdc.gov/ncipc</a>
<i>Best Practices of Youth Violence Prevention:</i>	
<i>A Sourcebook for Community Action.</i> . . . . .	<a href="http://www.cdc.gov/ncipc/dvp/bestpractices.htm">www.cdc.gov/ncipc/dvp/bestpractices.htm</a>
Harborview Injury Prevention and Research Center . . . . .	<a href="http://depts.washington.edu/hiprc">http://depts.washington.edu/hiprc</a>
US Department of Justice	
Office of Juvenile Justice and Delinquency Prevention. . . . .	<a href="http://www.ojjdp.ncjrs.org">www.ojjdp.ncjrs.org</a>
The National Youth Violence Prevention Resource Center . . . . .	<a href="http://www.safeyouth.org">www.safeyouth.org</a>
Missouri Juvenile Justice Association . . . . .	<a href="http://www.mjja.org">www.mjja.org</a>
2005 Youth Risk Behavior Survey . . . . .	<a href="http://www.cdc.gov/yrbss">www.cdc.gov/yrbss</a>

## SUICIDES

**“Suicide is not chosen; it happens when pain exceeds resources for coping with pain.”**

**Suicide was the manner of death of 21 Missouri children in 2005.**

### Representative Cases:

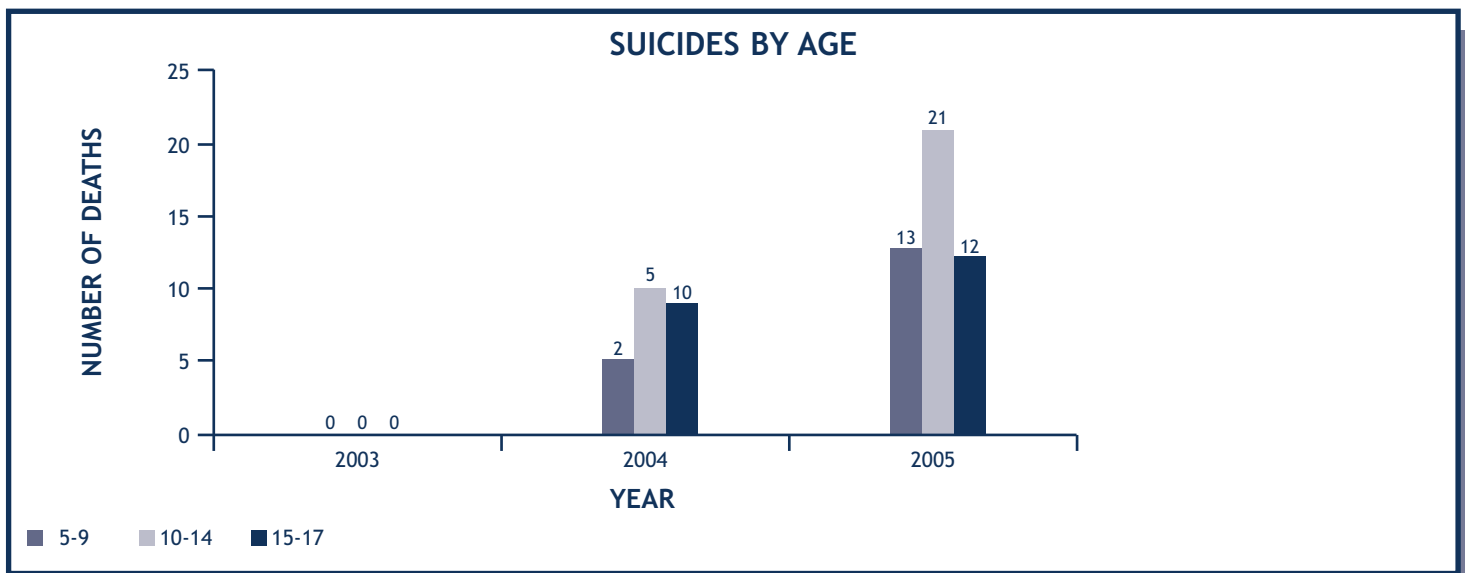
- **Parents and professionals are responsible for children must be educated to recognize and respond to risk factors for suicide.**

A 13-year-old male had argued with his father earlier in the day and talked of killing himself. Later in the day, he was in the house alone, while his father and brother went outside. He used his father’s pistol to shoot himself in the head.

A 12-year-old girl had been depressed and talking of wanting to die for several days, after learning of the impending death of a family member. A counselor had talked her out of it and attempted to get her into a hospital, but there were no beds. She found a handgun in the home and shot herself.

A 14-year-old had been confined to a juvenile facility for criminal actions. He was observed to be upset, crying and banging his head on the walls, wanting out. Staff was checking on him every 15 minutes and found him hanging in his room.

In Missouri and the United States, suicide is the third leading cause of injury-related deaths for young people following unintentional injuries and homicides. The suicide rate among young teens and young adults increased by more than 300% in the last three decades and rates continue to remain high. In Missouri in 2005, **21** children died of self-inflicted injury; **12** were age 15-17; the remaining **9** were children age 10-14.



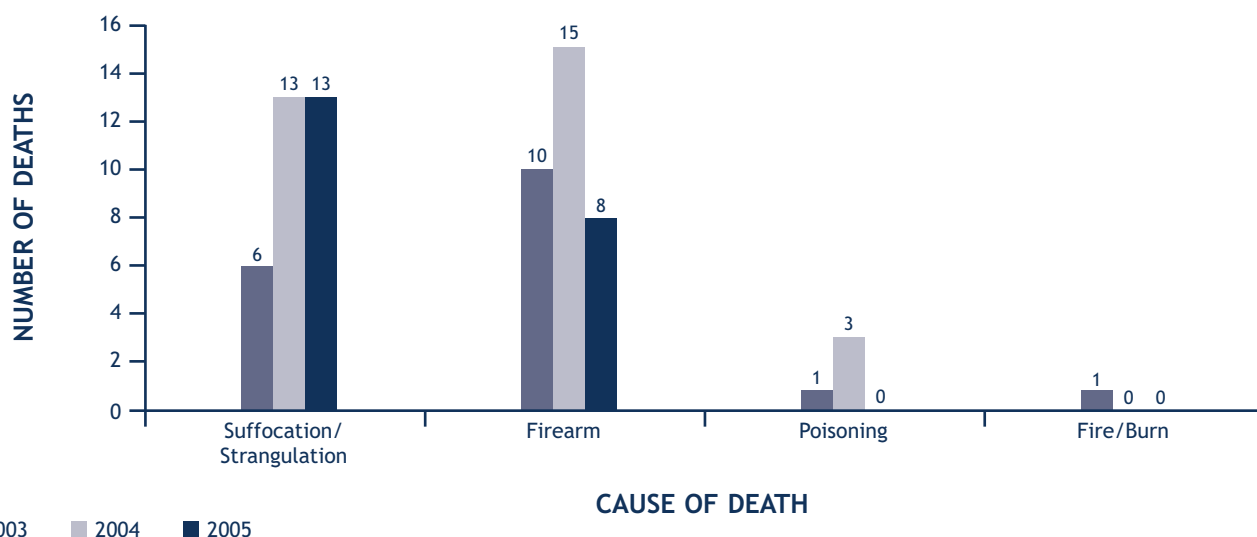
White males comprise the majority of adolescent suicide victims in Missouri. Although more females attempt suicide than males, males are approximately three times more likely to die from suicide.

## SUICIDES BY SEX AND RACE

SEX	2003	2004	2005	RACE	2003	2004	2005
FEMALE	4	9	6	WHITE	15	28	13
MALE	14	22	15	BLACK	3	1	7
				OTHER		2	1
	18	31	21		18	31	21

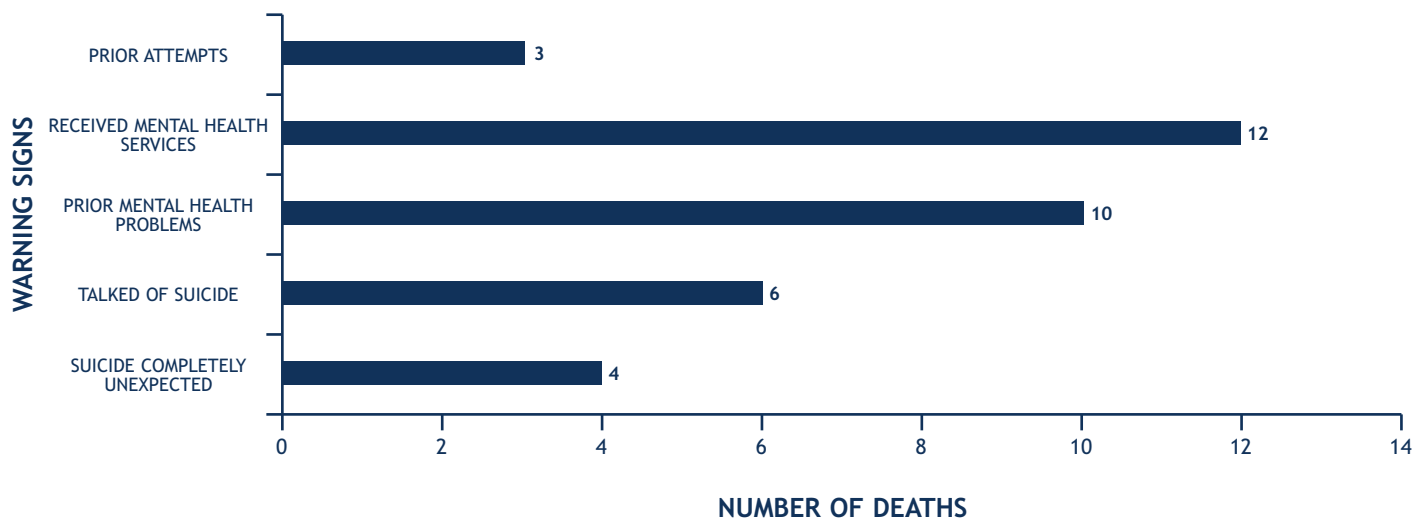
Suffocation/strangulation and firearms are the most common mechanism of suicide among Missouri children.

## SUICIDES BY MECHANISM



Of the **21** suicide victims age 17 and under in 2005, **16** (76%) had displayed one or more warning signs.

## WARNING SIGNS OF SUICIDE



“The suffering of the suicidal is private and inexpressible, leaving family members, friends, and colleagues to deal with an almost unfathomable kind of loss, as well as guilt. Suicide carries in its aftermath a level of confusion of devastation that is, for the most part, beyond description.”

*-Kay Redfield Jamison*

## RISK AND PROTECTIVE FACTORS FOR YOUTH SUICIDE:

Suicide is a reaction to intense feelings of loneliness, worthlessness, hopelessness, or depression. Suicidal behaviors in young people are usually the result of a process that involves multiple, social, economic, familial, and individual risk factors, with mental health problems playing an important part in its development. Risk factors compiled from the National Strategy for Suicide Prevention fall into three general categories:

### Biopsychosocial:

- Mental health disorders, particularly depression, anxiety and related mood disorders
- Alcohol and other substance use disorders
- Hopelessness
- Impulsive and/or aggressive tendencies
- History of trauma or abuse
- Major physical illness
- Previous suicide attempt
- Family history of suicide

### Environmental:

- Academic, job or financial loss
- Relational or social loss
- Easy access to lethal means
- Local clusters of suicide that have a contagious influence

### Sociocultural

- Lack of social support and sense of isolation
- Stigma associated with help-seeking behavior
- Barriers to accessing health care, especially mental health and substance abuse treatment
- Certain cultural and religious beliefs (for instance, the belief that suicide is a noble resolution of a personal dilemma)

Protective factors reduce the likelihood of suicide; they enhance resilience and may serve to counterbalance risk factors. Both parent-family connectedness and perceived school connectedness have been shown to be protective against suicidal behavior.

### Key protective factors for suicide include:

- Effective clinical care for mental, physical and substance use disorders
- Easy access to a variety of clinical interventions and support of help-seeking
- Strong connections to family and community support
- Support through ongoing medical and mental health care relationships
- Skills in problem solving conflict resolution, and nonviolent handling of disputes
- Cultural and religious beliefs that discourage suicide and support self-preservation

Only a few studies have examined protective factors among youth for suicidal behavior.



## THE MISSOURI SUICIDE PREVENTION PLAN:

In 1999, the U.S. Surgeon General, Dr. David Satcher, issued a “Call to Action to Prevent Suicide,” introducing an initial blueprint for reducing suicide in the United States, summarized as “AIM,” awareness, intervention and methodology. In response to the national recognition of suicide as a worldwide public health problem, collaborative planning efforts began in Missouri that resulted in the passage of legislation in 2003, that mandates the development of a statewide suicide prevention plan.

The “Missouri Suicide Prevention Plan, 2005-2010” includes research, data, specific strategies for reducing suicide and suicidal behaviors, and links to suicide prevention resources. The state plan is available online at the Missouri Department of Mental Health website: [www.dmh.mo.gov/cps/issues/suicide.htm](http://www.dmh.mo.gov/cps/issues/suicide.htm). The writers point out that suicide is a huge and complex problem and Missouri’s communities are too diverse in their members and needs for a single intervention to be adequate. Thus, a diverse array of interventions will be required to meet the particular local needs of the many unique communities in Missouri. Collaboration is essential if recommendations are to be effective. Communities should use the plan as a guide to develop and implement their own local plan.

## PREVENTION RECOMMENDATIONS:

### For parents:

- Seek early treatment for children with behavioral problems, possible mental disorders (particularly depression and impulse-control disorders) and substance abuse problems.
- Limit young people’s access to lethal means of suicide, particularly firearms.

### For community leaders and policy makers:

- Encourage health insurance plans to cover mental health and substance abuse on the level physical illnesses are covered.
- Support and implement school and community prevention programs designed to address suicide and suicidal behavior as part of a broader focus on mental health, coping skills in response to stress, substance abuse and aggressive behaviors.
- Enact and enforce laws and policies that limit young people’s access to firearms and encourages responsible firearm ownership.

### For professionals:

- Children who have attempted suicide or displayed other warning signs should receive aggressive treatment attention.

### For Child Fatality Review Panels:

- Support or facilitate evidence-based suicide prevention programs in your community.

- In reviewing a possible suicide, consider carefully the warning signs and history of the victim. Consider, also, points of early intervention that can be enhanced in your community to prevent other suicides and suicidal behaviors.

## **RESOURCES AND LINKS:**

Missouri Department of Mental Health, Division of  
Comprehensive Psychiatric Services . . . . . [www.dmh.mo.gov/cps/issues/suicide.htm](http://www.dmh.mo.gov/cps/issues/suicide.htm)  
The Missouri Suicide Prevention Plan, mental health resources, suicide prevention resources, data,  
fact sheets, support groups and organizations and other links

KUTO (Kids Under Twenty-One) . . . . . [www.kuto.org](http://www.kuto.org)  
Offers a youth crisis Helpline, staffed entirely by trained youth volunteers.  
1-888-644-5886

Missouri Department of Elementary and  
Secondary Education . . . . . [http://dese.mo.gov/divcareered/guide\\_crisis\\_counseling.htm](http://dese.mo.gov/divcareered/guide_crisis_counseling.htm)  
Offers suicide prevention training to school personnel.

National Youth Violence Prevention Resource Center. . . [www.safeyouth.org/scripts/topics/suicide.asp](http://www.safeyouth.org/scripts/topics/suicide.asp)

Yellow Ribbon Suicide Prevention Program . . . . . [www.yellowribbon.org](http://www.yellowribbon.org)

National Center for Injury Prevention and Control . . . . . [www.cdc.gov/ncipc](http://www.cdc.gov/ncipc)

Youth Suicide Prevention Programs: A Resource Guide . . [www.cdc.gov/ncipc/pub-res/youthsui.htm](http://www.cdc.gov/ncipc/pub-res/youthsui.htm)

Suicide Prevention Resource Center. . . . . [www.sprc.org](http://www.sprc.org)

Suicide Prevention Advocacy Network . . . . . [www.span.org](http://www.span.org)

American Association of Suicidology . . . . . [www.suicidology.org](http://www.suicidology.org)

National Suicide Prevention Lifeline: 1-800-SUICIDE (784-2433)

Missouri Department of Mental Health,  
Access Crisis Intervention (ACI) Hotlines . . . . . [www.dmh.mo.gov/cps/ACImap.htm](http://www.dmh.mo.gov/cps/ACImap.htm)

Life Crisis Services (St. Louis area): 314-647-HELP (4357)

Mid-Missouri Crisis Line: 1-888-761-HELP (4357)

**“Suicide has stolen lives around the world and across the centuries. Meanings attributed to suicide and notions of what to do about it have varied with time and place, but suicide has continued to exact a relentless toll. Only recently have the knowledge and tools become available to approach suicide as a preventable problem with realistic opportunities to save many lives.”**

**-National Strategy for Suicide Prevention**

# THE PRACTICAL APPLICATION OF CHILD DEATH REVIEW: PREVENTION OF CHILD FATALITIES

The death of a child is a sentinel event that captures the attention of the public and creates a sense of urgency that deserves a well-planned and coordinated prevention response. Generally, successful prevention initiatives are realistic in scope and approach, clear and simple in their message, and based on evidence that they work!

Local and regional teams are remarkably dedicated and enthusiastic in initiating timely prevention activities that serve to raise awareness, educate parents and caretakers, influence public policy and involve the community in prevention initiatives. In Missouri, local CDR team members organized a coalition focused on child fatality prevention after two residential fires killed three children in less than a month. The coalition collaborated with two area fire departments to canvass the neighborhoods where the deaths occurred, installed smoke detectors and batteries where they were needed and raised public awareness through the media. A decade later, the Annual Neighborhood Fire Prevention Awareness Day continues in multiple locations throughout the region.

At the state and national level, the sum of collected data is used to identify trends and patterns that require systemic solutions. Researchers in St. Louis utilized Missouri CDR data to gain new insights into sudden, unexpected infant deaths and concluded that certain unsafe sleep arrangements occurred in the large majority of cases of sudden infant deaths diagnosed as SIDS, unintentional suffocation and cause undetermined. Research had demonstrated what CDR team members had suspected: Infant deaths caused by unsafe sleep conditions were preventable. In Missouri, Iowa, Wisconsin, Minnesota and other states, safe sleep campaigns, developed and implemented by a variety of public and private entities, include parent education and provide a safe crib to families in need. The Consumer Product Safety Commission and the American Academy of Pediatrics revised their safe sleep recommendations to reflect this new information.

## ***Basic principles***

It is widely accepted among professionals in the field of injury prevention that the public health tools and methods used effectively against infectious and other diseases and occupational hazards, can also be applied to injury prevention. As a result, attention is given to the environment and to products used by the public, as well as individual behavior. An epidemiologic approach to child fatalities and near-fatalities offers tools that can effectively organize prevention interventions and draws on expertise in surveillance, data analysis, research, public education and intervention. There are four steps that are interrelated:

- ***An ongoing surveillance of child fatalities provides comparable data, documentation and monitoring over time. (What's the problem?)*** Current efforts to create a standardized case report tool and data system on the national level are keys to improving and protecting the lives of all children and adolescents. Even a small subset of uniform data would give us the opportunity to identify valuable national trends and patterns. The National Maternal Child Health Center for Child Death Review provides technical assistance and training, support resources and tools to states with the goal of expanding reviews to all preventable deaths, and using the information from CDR to improve and protect the lives of children.

- **Risk factor research identifies or confirm what is known about risk and protective factors that may have relevance for public policies and prevention programs. (What's the cause?)** In Western New York, a hospital-based program was developed to educate all new parents about the dangers of shaking an infant. This initiative has effectively reduced the incidence of Shaken Baby Syndrome in that region every year since it was implemented. This program has been replicated throughout the country and proven equally successful. Several states have passed legislation requiring this program in all hospitals. Other states have included SBS education as part of the licensing process for child care providers. In this way, prevention of Shaken Baby Syndrome is being integrated in state and community systems that provide services and support to children and families.
- **Identification of evidence-based strategies that have proven effective or have high potential to be effective. (What works?)** Assessing effectiveness of a prevention strategy as it is implemented is difficult, because of limited resources and limited reliability of existing assessment tools. However, resources are available to assist in evaluating various strategies during the early stages of planning. The benefits in terms of funding and long-term cost are obvious. The safe sleep and SBS initiative described above were based on research. University-based research groups, such as Harborview Injury Prevention and Research Center and the Childhood Injury Research Group at the University of Missouri provide evaluations of various injury prevention strategies. National organizations and governmental agencies, such as the National Safe Kids campaign and the National Center for Injury Prevention at CDC and the American Academy of Pediatrics provide research and prevention information.
- **Implementation of strategies where they currently do not exist. (How do you do it?)** Outcomes for prevention initiatives are generally functions of structure and duration. Short-term, emergency and educational programs are effective in the short-term; unfortunately, such programs are usually based on the effort and enthusiasm of a few individuals and a limited funding source. Prevention initiatives that are integrated into community and state systems are sustainable and effective in the long term. Examples include state laws that require proper restraint for child passengers in motor vehicles and helmets for children riding bicycles. In many areas, schools include safety education for children and health care providers, who are in a unique position to assist in the prevention of child maltreatment, actively promote health and safety for children. Many state and local entities responsible for licensing child care providers are mandating education on safe sleep for infants and toddlers and prevention of child abuse, including Shaken Baby Syndrome, as part of their curricula.

## RESOURCES:

American Academy of Pediatrics . . . . . [www.aap.org](http://www.aap.org)  
 Children's Safety Network . . . . . <http://research.marshfieldclinic.org>  
 Consumer Product Safety Commission . . . . . [www.cpsc.gov](http://www.cpsc.gov)  
 Harborview Injury Prevention and Research Center . . . . . <http://depts.washington.edu/hiprc>  
 Missouri Child Fatality Review Program . . . . . <http://dss.missouri.gov/stat/mcfrp.htm>  
 Missouri Child Death Pathologists' Network . . . . . <http://dss.missouri.gov/stat/cpn/htm>

Missouri Children's Trust Fund . . . . .	<a href="http://www.ctf4kids.org">www.ctf4kids.org</a>
Missouri Prevention. . . . .	<a href="http://www.missouriprevention.org">www.missouriprevention.org</a>
National Center for Injury Prevention and Control . . . . .	<a href="http://www.cdc.gov/ncipc">www.cdc.gov/ncipc</a>
National Center on Shaken Baby Syndrome . . . . .	<a href="http://www.dontshake.com">www.dontshake.com</a>
National MCH Center for Child Death Review . . . . .	<a href="http://www.childdeathreview.org">www.childdeathreview.org</a>
National Safe Kids Campaign . . . . .	<a href="http://www.safekids.org">www.safekids.org</a>

## PREVENTION FINDINGS: THE FINAL REPORT

**“Injury is a problem that can be diminished considerably if adequate attention and support are directed to it. Exciting opportunities to understand and prevent injuries and to reduce their effects are at hand. The alternative is the continued loss of health and life to predictable, preventable and modifiable injuries.”**

***-Dr. William Foege, Former Director of the Centers for Disease Control and Prevention***

The difference between a fatal and nonfatal event is often only a few feet, a few inches, or a few seconds. In the past, most people believed that serious and fatal injuries were random or unavoidable events, or simply the result of individual carelessness. Fortunately, the science of injury prevention has moved away for this fatalistic approach to one that focuses on the environment and products used by the public, as well as individual behavior. As a result, unintentional injury-related death rates among children in the United States have declined dramatically over the last two decades. Injuries are now widely recognized as understandable, predictable and preventable.

A *preventable child death* is defined as one in which awareness or education by an individual or the community may have changed the circumstances that lead to the death. Prior to August 2000, CFRP panels were asked to report their conclusions and prevention responses for each death reviewed on the Data Form 2. Legislation passed in 2000, now requires that the panel complete a Final Report, summarizing their findings in terms of circumstances, prevention messages, and community-based prevention initiatives.

The death of a child is a sentinel event that captures the attention of the community, creates a sense of urgency and a window of opportunity to respond to the questions, “What can we do?” County-based prevention activities serve to raise awareness, educate parents and caretakers, influence public policy and involve the community in prevention initiatives that protect and improve the lives of children. In 2005, CFRP panels throughout our state reported their findings and prevention responses utilizing the Final Report. The initiatives highlighted below demonstrate how a few volunteer professionals have been able to measurably reduce or eliminate threats to the lives and well being of countless Missouri children.

### Legislation, Law or Ordinance:

An eleven-year-old girl committed suicide by means of a self-inflicted gunshot wound. She had a history of depression and behavior disorders. Her father had attempted to find her mental health placement but, due to budget cuts, there were no beds available in the area. The panel suggested that this case be used to lobby legislature to restore the funding for mental health facilities.

An infant died at the age of seven days, as a result of complications of prematurity and the effects of drug exposure. Both the baby and his mother tested positive for methamphetamine and marijuana. The panel recommended that legislation be enacted that would make it a crime for a mother to knowingly take drugs or other substances that would cause harm to her unborn child.

### **Community Safe Project:**

While riding on an ATV with her sibling, a 17-year-old girl was thrown from the vehicle after losing control. She died after striking her head on a utility pole; she was not wearing a helmet. The panel held a community-wide safety day regarding helmet safety on both ATV's and bicycles.

A sixteen-year-old girl was accidentally shot by a peer, who was experimenting with a loaded gun. The panel suggested that gun safety should be promoted throughout the community. They recommended that the focus be on correct storage of firearms in the home and hunter safety.

### **Public Forums:**

A sixteen-year-old boy drowned while swimming in a lake with his friends. The boys had been swimming outside the posted safety boundaries. The panel worked with the local Health Department and Water Patrol to organize a town meeting regarding water safety.

A six-year-old girl with an extensive medical history died after her bowel became obstructed. She had missed several doctor appointments and was severely malnourished at the time of her death. The child was allegedly home-schooled and not been seen on a regular basis, by anyone other than family. The panel recommended that the parents be held accountable. They also initiated a public meeting to raise awareness of the residents' responsibility to observe neighborhood children and report child abuse and neglect.

### **Educational Activities in Schools:**

A one-month-old boy died after being beaten by his teenage father. He had multiple old and new injuries. The panel thought it would be appropriate to have the school provide life skills and parenting classes to teens who are or are going to be parents. They initiated a child abuse prevention presentation at the local high school, which featured the Shaken Baby Syndrome (SBS) video and educational materials available from the Missouri Children's Trust Fund.

A six-month-old boy was violently shaken by his father and later died of his injuries. The family lived in a Hispanic community and spoke little English. The local CFRP panel discussed ways to reach the growing Hispanic population in the community regarding Shaken Baby Syndrome and the other child abuse issues. The panel is working with Parents as Teachers to encourage them to include child abuse prevention in their curriculum.

### **Educational Activities in the Media:**

A three-year-old boy was left alone to play in his room for over an hour. At some point, he wandered out of his house unobserved and onto a busy highway approximately 800 feet away from his home. He was struck by a car and died of his injuries. Both parents indicated that they were unaware that the child had left his room, each apparently believing the other one was checking on him. The panel drafted a media release to remind parents that small children need constant supervision.



A two-year-old boy wandered away from adults at a family picnic. He was missing for approximately ten minutes, while the family frantically searched the area for him. He was discovered in a pond, where he had drowned. The panel took out a water safety ad in the local paper to remind residents that young children need to be well supervised by a designated adult, especially outdoors near pools, lakes and ponds.

### Consumer Product Safety:

A seven-month-old infant was placed in a baby swing for nap. While unattended, the child slid down in the swing and suffocated, when the chest strap became wrapped around her neck. The panel saw this as an opportunity to remind parents never to leave infants unattended and to always make sure that the child is secured in a baby swing or any other device, using straps and other restraints appropriately.

### News Services:

A sixteen-year-old male had his driver's license less than six months, when he lost control of his vehicle, while speeding around a sharp corner. He was not wearing a seat belt. He died of multiple head and chest injuries. The local CFRP panel ran several articles in the local paper, stressing the importance of seatbelts. They also worked with the local radio stations to run ads regarding safe driving for teens.

A five-month-old male died as a result of injuries inflicted by his mother's paramour. Upon autopsy, it was revealed that there were many old injuries that had never been diagnosed. During the review of his death, the CFRP panel learned that the infant's mother had been known to leave him in the care of her boyfriend while she worked, despite the fact that he had objected and demonstrated frustration with the baby's crying. The panel released a public service announcement and several newspaper articles focusing on the importance of making appropriate childcare arrangements.

### Changes in Agency Practice:

A Missouri teen died from a drug overdose. During the review, the CFRP panel learned that the victim had apparently purchased the prescription medication from a friend, who had stolen it from an elderly relative. The panel discussed this death at length and decided that it



"Alone we can do so little, together we can do so much." -Helen Keller

should be a practice of law enforcement and coroners to confiscate all prescription medication of hospice or elderly patients at the time of their death, so their prescription medication does not end up on the streets.

### **Other Programs/Activities:**

A fourteen-year-old female was hit by a van after running out into oncoming traffic. During the review, the CFRP panel learned that there had been an ongoing problem at the scene of the incident with teens “playing chicken” with oncoming cars at night. The local panel suggested that the Missouri Department of Transportation erect a barrier at this location to restrict pedestrian access to the highway.

A nine-year-old boy was electrocuted while climbing a tree at a friend’s house. The CFRP panel contacted the local electric cooperative and made arrangements for educational programs to be presented in the elementary schools regarding electrical safety.

STAT reviews every request for assistance as a training opportunity.

Go to the people  
Work with them  
Learn from them  
Respect them  
Start with what they know  
Build with what they have  
  
And when the work is done  
The task is accomplished  
The people will say,  
“we have done this ourselves”  
-Lao Tsu, China 700 BC

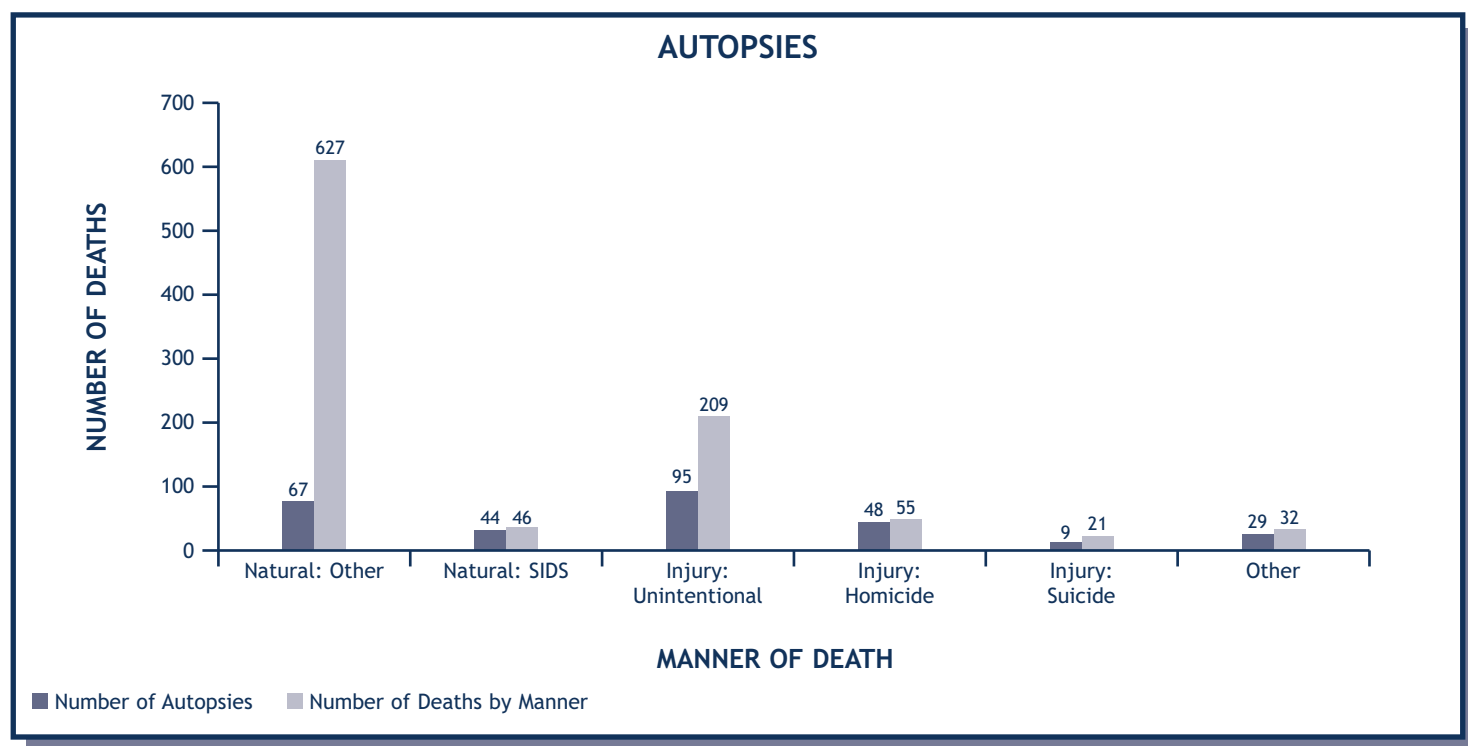


## APPENDICES

### APPENDIX 1. AUTOPSIES

The autopsy is a critical component in accurately determining the cause of death, especially in the case of sudden infant deaths. RSMo 194.117 requires that an autopsy be performed for all children from 1 week to 1 year of age, who die in a sudden, unexplained manner.

Missouri's Certified Child-Death Pathologist Network ensures autopsies performed on children, birth through age 17, are performed by professionals with expertise in forensic pediatrics. Additionally, network members are available to consult with coroners and other investigating child deaths. A listing of network members can be obtained through STAT or on the internet at [www.dss.mo.gov/stat/cpn.htm](http://www.dss.mo.gov/stat/cpn.htm).



## APPENDIX 2. MANDATED ACTIVITIES FOR CHILD FATALITIES

Every county must have a multidisciplinary child fatality review panel (114 counties and City of St. Louis).

The county panel must consist of at least the following seven core members: prosecuting attorney, coroner/medical examiner, law enforcement representative, Children's Division representative, public health representative, juvenile officer and emergency services representative. Panels may elect to have additional members.

All deaths, ages birth to 17, must be reported to the coroner/medical examiner.

Children, age 1 week to 1 year, who die in a *sudden, unexplained* manner must have an autopsy.

The State CFRP panel must meet at least twice per year to review the program's progress and identify systemic needs and problems.

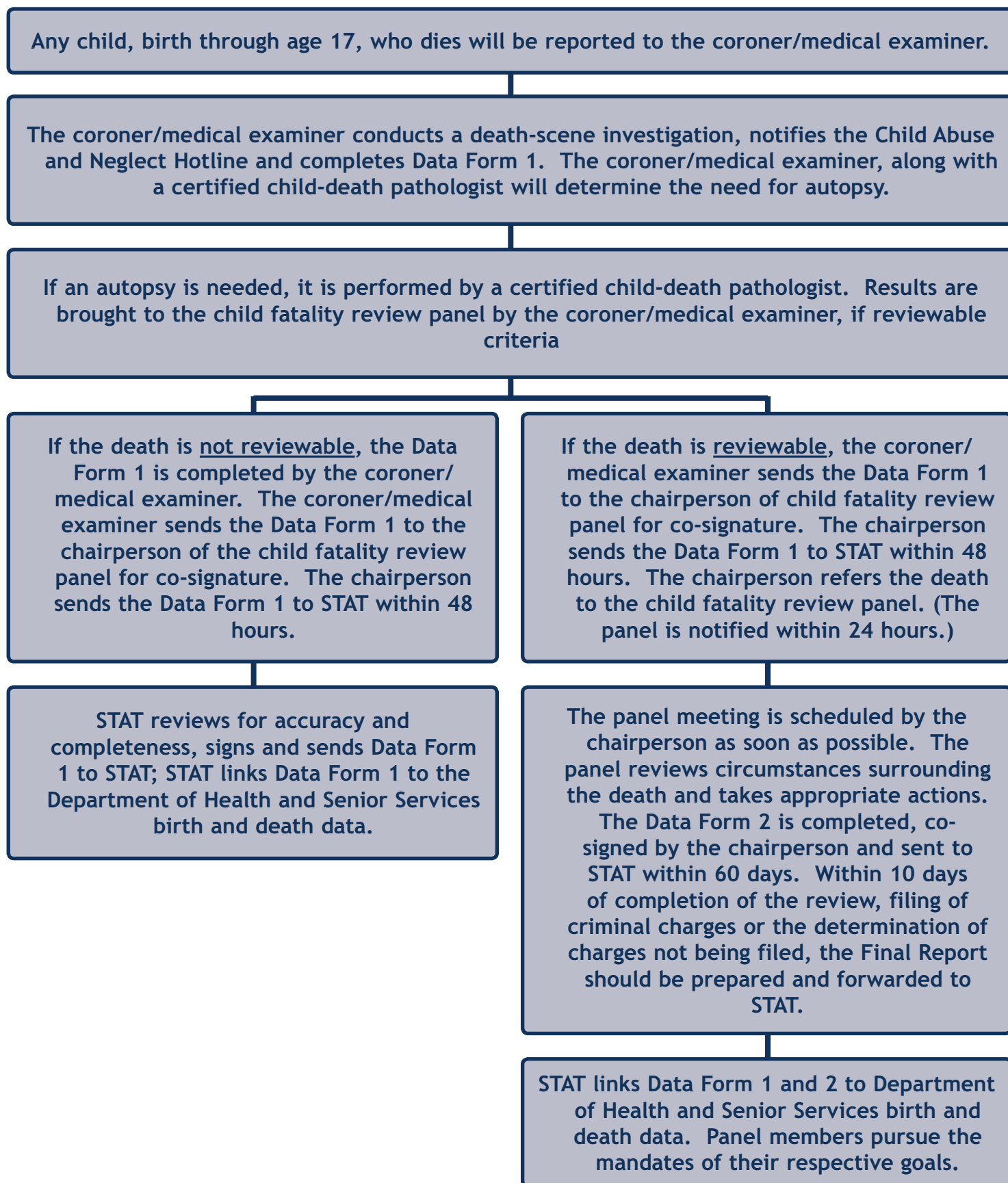
Panels must use uniform protocols and data collection forms.

Certified child-death pathologists must perform the autopsies.

Knowingly violating reporting requirements is a Class A misdemeanor.

When a child's death meets the criteria for review, activation of the panel must occur within 24 hours of the child's death, with a meeting scheduled as soon as practical.

## APPENDIX 3. PROCESS FOR CHILD FATALITY REVIEWS



## APPENDIX 4. MISSOURI INCIDENT CHILD FATALITIES (AGE LESS THAN 18) BY COUNTY 2003-2005

County of Event	All Deaths			Reviewed Deaths			Injury Deaths		
	2003	2004	2005	2003	2004	2005	2003	2004	2005
Adair	1	2	1	0	0	0	0	0	0
Andrew	1	2	2	0	2	0	0	1	0
Atchison	0	0	0	0	0	0	0	0	0
Audrain	4	2	6	2	1	3	2	1	2
Barry	9	5	11	7	2	9	5	2	8
Barton	3	0	1	2	0	1	3	0	1
Bates	1	3	3	1	0	2	1	2	2
Benton	4	2	1	4	0	1	3	1	1
Bollinger	1	4	5	0	4	4	0	3	4
Boone	49	36	37	10	3	9	9	2	7
Buchanan	12	19	14	3	9	7	2	4	6
Butler	12	1	19	6	1	13	3	0	11
Caldwell	2	4	0	1	2	0	1	1	0
Callaway	10	4	11	9	1	6	7	1	2
Camden	9	6	6	8	4	3	8	4	3
Cape Girardeau	9	1	9	0	0	1	2	0	0
Carroll	0	2	2	0	0	0	0	1	1
Carter	2	3	0	2	2	0	1	2	0
Cass	6	10	14	2	5	9	1	2	5
Cedar	4	3	3	2	1	3	2	1	1
Chariton	1	1	2	1	1	2	1	1	0
Christian	9	8	11	8	4	6	5	2	6
Clark	0	2	0	0	2	0	0	2	0
Clay	10	30	22	6	14	10	4	10	6
Clinton	3	2	2	1	2	2	1	1	1
Cole	3	4	7	1	1	2	2	2	2
Cooper	2	4	0	1	3	0	1	2	0
Crawford	2	3	4	2	3	0	1	3	1
Dade	3	0	1	1	0	1	3	0	1
Dallas	6	5	1	3	3	0	2	1	0
Daviess	1	2	2	0	1	1	1	0	1
DeKalb	0	1	2	0	0	0	0	0	1
Dent	1	3	2	1	2	0	0	2	2
Douglas	1	1	4	1	0	1	1	1	3
Dunklin	3	5	7	0	2	0	2	2	1
Franklin	10	7	13	7	3	6	7	2	5
Gasconade	6	0	1	5	0	1	6	0	1
Gentry	1	2	0	0	0	0	0	0	0
Greene	58	56	26	21	20	12	11	16	10
Grundy	2	0	4	0	0	2	1	0	3
Harrison	1	0	0	1	0	0	1	0	0
Henry	6	0	4	6	0	3	3	0	2

## APPENDIX 4. MISSOURI INCIDENT CHILD FATALITIES (AGE LESS THAN 18) BY COUNTY 2003-2005

County of Event	All Deaths			Reviewed Deaths			Injury Deaths		
	2003	2004	2005	2003	2004	2005	2003	2004	2005
Hickory	4	2	1	2	1	0	2	1	0
Holt	0	0	0	0	0	0	0	0	0
Howard	1	0	0	1	0	0	0	0	0
Howell	5	5	7	5	3	3	2	2	2
Iron	2	1	1	1	1	1	1	0	0
Jackson	157	144	145	64	61	60	36	28	27
Jasper	11	16	13	2	10	5	5	9	2
Jefferson	27	34	25	15	14	13	8	15	10
Johnson	7	8	9	3	2	6	1	3	4
Knox	0	0	0	0	0	0	0	0	0
Laclede	5	7	14	3	6	3	3	2	3
Lafayette	6	4	3	5	4	1	4	2	2
Lawrence	7	7	5	3	2	1	2	4	3
Lewis	0	1	5	0	1	0	0	1	1
Lincoln	4	4	0	0	3	3	0	2	0
Linn	0	2	1	0	1	1	0	0	0
Livingston	2	4	2	1	3	1	1	2	1
McDonald	5	6	6	1	4	4	4	1	3
Macon	4	3	1	3	3	0	2	3	0
Madison	2	2	0	1	2	0	1	1	0
Maries	0	1	1	0	0	0	0	1	0
Marion	4	2	0	1	0	0	1	0	0
Mercer	2	0	0	1	0	0	1	0	0
Miller	4	4	1	3	1	0	3	2	0
Mississippi	6	4	1	4	4	0	2	4	0
Moniteau	3	5	0	1	5	0	1	4	0
Monroe	2	0	0	0	0	0	2	0	0
Montgomery	0	0	2	0	0	2	0	0	1
Morgan	4	0	1	3	0	0	2	0	0
New Madrid	2	0	3	2	0	0	2	0	0
Newton	24	9	23	1	2	10	1	2	8
Nodaway	0	1	3	0	1	1	0	1	1
Oregon	0	0	2	0	0	2	0	0	2
Osage	2	0	2	1	0	1	2	0	1
Ozark	2	1	2	2	1	1	2	1	1
Pemiscot	7	5	3	4	3	1	3	2	0
Perry	1	4	3	1	2	3	1	1	1
Pettis	6	6	10	6	3	1	4	4	1
Phelps	7	6	5	4	4	3	3	3	2
Pike	2	9	8	1	4	7	1	6	7
Platte	3	6	7	2	3	1	1	3	1

## APPENDIX 4. MISSOURI INCIDENT CHILD FATALITIES (AGE LESS THAN 18) BY COUNTY 2003-2005

County of Event	All Deaths			Reviewed Deaths			Injury Deaths		
	2003	2004	2005	2003	2004	2005	2003	2004	2005
Polk	0	1	5	0	0	2	0	0	2
Pulaski	6	6	8	2	3	3	3	3	3
Putnam	0	0	0	0	0	0	0	0	0
Ralls	1	1	1	1	1	1	1	1	1
Randolph	5	3	1	1	0	0	4	2	0
Ray	0	3	4	0	2	3	0	1	2
Reynolds	3	1	2	3	0	2	1	0	1
Ripley	2	2	3	1	0	2	1	0	1
St. Charles	30	40	39	9	16	17	6	11	12
St. Clair	1	0	0	0	0	0	0	0	0
St. Francois	6	3	13	2	0	8	1	2	3
St. Louis County	192	167	174	52	54	55	28	29	33
Ste. Genevieve	2	0	2	1	0	2	1	0	2
Saline	4	9	5	0	6	1	0	5	1
Schuyler	0	0	1	0	0	0	0	0	0
Scotland	2	1	1	1	1	0	0	0	0
Scott	5	1	8	1	0	5	1	1	2
Shannon	1	1	1	1	0	1	1	0	1
Shelby	0	1	0	0	0	0	0	0	0
Stoddard	8	11	8	6	5	6	5	4	7
Stone	5	5	0	5	5	0	3	4	0
Sullivan	0	2	0	0	0	0	0	1	0
Taney	8	16	4	6	13	3	5	9	3
Texas	4	4	3	2	1	1	2	1	1
Vernon	4	5	2	1	4	2	1	3	2
Warren	2	2	1	2	2	0	2	2	0
Washington	4	3	3	2	2	1	1	0	1
Wayne	0	3	2	0	3	1	0	1	1
Webster	6	9	12	5	6	9	4	3	7
Worth	1	1	0	1	0	0	0	0	0
Wright	2	2	5	2	2	1	1	2	4
St. Louis City	163	123	107	56	54	46	25	35	27
STATE TOTAL	1,065	984	990	432	432	427	304	305	301

\*\*Form 2 completed after report deadline.

## APPENDIX 5. MISSOURI INCIDENT CHILD FATALITIES (AGE LESS THAN 18) BY AGE, SEX AND RACE 2003-2005

Age	All Deaths			Reviewed Deaths			Injury Deaths		
	2003	2004	2005	2003	2004	2005	2003	2004	2005
0	671	574	601	168	155	156	53	53	62
1	29	43	29	18	32	18	10	16	9
2	28	30	24	20	18	17	16	16	15
3	19	14	22	10	10	15	10	8	9
4	23	21	15	17	14	11	11	11	9
5	12	17	11	7	10	6	4	9	5
6	4	10	11	4	4	8	3	5	6
7	14	13	10	9	8	6	7	5	4
8	9	12	10	6	5	3	5	3	5
9	12	10	10	6	5	8	6	5	6
10	14	14	11	7	11	8	6	9	6
11	16	15	7	6	10	6	5	7	6
12	15	16	12	10	6	9	9	7	6
13	23	24	17	12	15	11	12	10	10
14	28	19	31	20	16	21	23	16	17
15	26	40	37	17	31	26	18	28	20
16	59	48	71	47	34	50	49	44	54
17	63	64	61	51	48	48	57	53	52
<b>TOTAL</b>	<b>1,065</b>	<b>984</b>	<b>990</b>	<b>435</b>	<b>432</b>	<b>427</b>	<b>304</b>	<b>305</b>	<b>301</b>

Sex	All Deaths			Reviewed Deaths			Injury Deaths		
	2003	2004	2005	2003	2004	2005	2003	2004	2005
Unknown	1	0	0	0	0	0	0	0	0
Male	608	562	591	273	248	266	195	180	200
Female	456	422	399	162	184	161	109	125	101
<b>TOTAL</b>	<b>1,065</b>	<b>984</b>	<b>990</b>	<b>435</b>	<b>432</b>	<b>427</b>	<b>304</b>	<b>305</b>	<b>301</b>

Race	All Deaths			Reviewed Deaths			Injury Deaths		
	2003	2004	2005	2003	2004	2005	2003	2004	2005
White	779	705	699	309	306	304	236	232	225
Black	267	257	275	124	118	117	67	66	72
Other	10	8	14	1	4	6	1	4	4
Unknown	9	14	2	1	4	0	0	3	0
<b>TOTAL</b>	<b>1,065</b>	<b>984</b>	<b>990</b>	<b>435</b>	<b>432</b>	<b>427</b>	<b>304</b>	<b>305</b>	<b>301</b>

## APPENDIX 6. DEFINITIONS OF IMPORTANT TERMS AND VARIABLES

### Certified Death:

Death included in the Department of Health and Senior Services, Missouri Center for Health Statistics (MCHS) mortality file, **reported by the death certificate.**

### Missouri Incident Death:

Death within Missouri of a child younger than 18 years. On the basis of data from the CFRP Data Form 1 or Data Form 2, one of the following is true:

- The child died as a result of an injury which occurred in Missouri.
- The child died as a result of a natural (non-injury) cause which occurred, or is assumed to have occurred, within Missouri. (This excludes deaths due to illness or other natural cause which occurred outside Missouri; e.g., a non-Missouri residence.)
- The child was born in Missouri and died as a newborn (within ten days of birth) without having left the state.

### CFRP Cause of Death:

Cause of death as reported on CFRP Data Forms 1 and 2. The forms include a category for natural cause which includes congenital anomalies, perinatal conditions, and Sudden Infant Death Syndrome (SIDS), sudden unexplained death and injuries classified by the type of agent or force which caused the injury (i.e., vehicular, drowning, firearm, fall, poisoning). The CFRP provides for an indication of whether or not the injury was inflicted, that is, whether it occurred as a result of the action of another person, without regard to intent or purpose of the action. If the case is referred to the CFRP panel for review, Data Form 2 is completed to report the findings of the panel. The Data Form 2 report includes information relevant to possible child abuse and neglect and information related to criminal proceedings.

### Mortality File Cause of Death:

The Department of Health and Senior Services Mortality File lists cause of death as reported by the ICD-10 code on Missouri death certificates. The ICD-10 coding classification system includes natural causes such as various diseases, congenital anomalies, perinatal conditions and certain ill-defined conditions (which includes SIDS). The injury classification includes those identified as “accidents” (unintentional), those considered intentional (homicide, suicide) and those with undetermined intent. Injury deaths are further classified by the type of agent or force which caused the injury (i.e., motor vehicle crash, firearm, poisoning, burn, fall, drowning).

### Mortality File Manner of Death:

Cause of death reported in the mortality file was formatted to conform to “Manner of Death” variable in death certificate. This includes six categories based on the ICD-10 code: Natural; Accident; Suicide; Homicide; Undetermined; and Pending Investigation.



## APPENDIX 6. DEFINITIONS OF IMPORTANT TERMS AND VARIABLES

### Sudden Infant Death Syndrome (SIDS):

Sudden death of an infant under one year of age which remains unexplained after a thorough case investigation, including performance of a complete autopsy, examination of death scene and review of clinical and social history.

- Morality File SIDS: Death by SIDS, as defined operationally by being reported in the mortality file associated with the ICD-10 code 7980.
- CFRP SIDS: Death by SIDS, as defined operationally by being reported in the CFRP file, from Data Form 1 and Data Form 2, as due to SIDS.

### Sudden, Unexplained Infant Death:

Sudden death of an infant less than one year of age due to unexplained cause, requiring the postmortem examination, scene investigation or review of social and medical history. Defined operationally by being reported as sudden, unexplained death on Data Form 1.

### Reviewable Death:

Death which has been reported by Data Form 1 as requiring review by the CFRP panel, whether or not the review has yet been completed and reported. The Data Form 1 report is required for all child deaths that occur in Missouri, and includes an indication of whether a review of that death will be required. If Data Form 1 indicates a reviewable death, Data Form 2 should be completed after the review.

### Reviewed Death:

Death that has been reviewed by a local CFRP panel and reported on Data Form 2.

### Mortality File County of Death:

The county, reported in the mortality file, in which the death was officially recorded. May be a Missouri or non-Missouri county.

### CFRP County of Death:

The county, reported by the Data Form 1 and Data Form 2, in which the death occurred. Only deaths in Missouri are included in the CFRP database.

### CFRP County of Incident:

The county, reported by Data Form 1 and Data Form 2, in which the fatal illness, injury or event occurred. If the county of incident is a Missouri county, the death is by definition a Missouri incident death. If the county of the incident is outside the state of Missouri, the death is by definition not a Missouri incident death. If the county is in Missouri, but the county of incident is not, only identifying information (Section A of Data Form 1) is requested.

## APPENDIX 6. DEFINITIONS OF IMPORTANT TERMS AND VARIABLES

### CFRP County of Residence:

The county, reported by Data Form 1 and Data Form 2, as the county of decedent's residence may be a Missouri or non-Missouri county. If the child is a newborn, the newborn's county of residence is the mother's county of residence.

### CFRP Region:

Location, reported by Data Form 1 and Data Form 2, in which the fatal illness, injury or event occurred, formatted to conform to the seven geographic regions defined for the CFRP program.

### Children's Division Child Abuse/Neglect (CA/N):

Death for which the Children's Division reports probable cause finding for child abuse or neglect. Probable cause may result from Children's Division investigation or court adjudication. Abuse refers to physical, sexual or emotional maltreatment or injury inflicted on a child, other than accidentally, by those responsible for the child's care, custody and control. Neglect refers to failure by those responsible for the child's care, custody and control to provide the proper or necessary support, education, nutrition, medical care or other care necessary for the child's well-being.

### CFRP Fatal Child Abuse and Neglect:

Child death resulting directly from inflicted physical injury and/or negligent treatment by parent or caretaker, regardless of motive or intent.

### Mortality File Child Abuse/Neglect:

Death for which the ICD-10 code in the mortality file indicates abuse or neglect. Relevant ICD-10 codes are 904.0, 967 and 968.4. These abuse/neglect deaths are usually under-reported relative to those by the Children's Division as substantiated child abuse or neglect.

### Mortality File Homicide Death:

Manner of death due to homicide, as reported by ICD-10 codes 960-979.

### Mortality File Suicide Death:

Manner of death due to suicide, as reported by ICD-10 codes 950-959.

### Mortality File Autopsy:

Indication from mortality file that decedent was autopsied.

### CFRP Autopsy:

Indication from CFRP file that decedent was autopsied and how the autopsy was paid for.

## APPENDIX 7. DEATH CERTIFICATE MANNER OF DEATH

(Summarized from: *A Guide for Manner of Death Classification*, draft presented to the National Association of Medical Examiners, September 24, 2001, prepared by Randy Hanzlick, M.D., John Hunsaker III, M.D., and Gregory J. Davis, M.D.)

All states have a standard death certificate that is based upon a model certificate called the US Standard Certificate of Death. The *certifier of death* is the physician, medical examiner or coroner who completes the cause of death section of the certificate that also includes details about the circumstances surrounding the death. Manner of death is one of the items that must be reported on the death certificate and a classification of death based on the circumstances surrounding a particular cause of death and how that cause came into play. In most states, the acceptable options for manner of death classification are: Natural, Accident, Suicide, Homicide and Undetermined.

The death certificate is used for two major purposes. One is to serve as legal documentation that a specific individual has died. In general, the death certificate serves as legal proof that the death has occurred, but not as legal proof of the cause of death. The second major purpose of the death certificate is to provide information for mortality statistics that may be used to assess the nation's health, cause of morbidity and mortality and developing priorities for funding and programs that involve public health and safety issues.

Manner of death is an American invention. A place to classify manner of death was added to the US Standard Certificate of Death in 1910. It was added to the death certificate by public health officials to assist in clarifying the circumstances of death and how an injury was sustained - not as a legally binding opinion. In general, the certifier of death completes the cause of death section and attest that, *to the best of the certifier's knowledge*, the person state died of the cause(s) and circumstances reported on the death certificate. Information on the death certificate may be changed, if needed.

There are basic, general “rules of thumb” for classifying manner of death.

- Natural deaths are due solely or nearly totally to disease and/or the aging process.
- Accident applies when an injury or poisoning occurred without intent to harm or cause death. In essence, the fatal outcome was unintentional.
- Suicide results from an injury or poisoning as a result of an intentional, self-inflicted act committed to do self-harm or cause the death of one's self.
- Homicide occurs when death results from a volitional act committed by another person to cause fear, harm or death. Intent to kill is a common element but is not required for classification as homicide.
- Undetermined is used when the information pointing to one manner of death is no more compelling than one or more other competing manners of death when all available information is considered.

In evaluating the manner of death in cases involving external causes or factors (such as injury or poisoning), injuries are often categorized as “intentional” (such as inflicted injury in child abuse) or “unintentional” (such as falling from a building). Intent is much more apparent in some cases than others and it is often difficult to assess a victim's or perpetrator's intent. The concept of “voluntary acts” or volition is helpful. In general, if a person's death results at the “hands of another” who committed a harmful volitional act directed at the victim, the death may be considered a homicide from the death investigation standpoint.

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